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The Dental Digest

June 1931

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THE DENTAL DIGEST

VOLUME XXXVII JUNE, 1931 NUMBER 6

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THE DENTAL DIGEST
GEORGE WOOD CLAPP, D.D.S., EDITOR
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THE DENTAL DIGEST

VOLUME XXXVII JUNE, 1931 NUMBER 6

Some Pertinent Considerations Relating to the Administration of General Anesthesia for Dental Surgery

By

HARRY J. FIELD, D.D.S.

and

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Since the days of the immortal Wells general anesthesia for dental surgery has marched steadily forward. Of the occasional relapses perhaps none was of more significance than that of the analgesia fad of two decades ago. Due to the overzealousness of the dental salesmen of that period, thousands of offices throughout the entire country were "sold" machines which were shortly to be listed among the museum pieces of the office. This process may be well compared to the present-day advertising campaign to "sell" x-ray machines to every practitioner. The fundamental need for postgraduate study and careful observation is completely ignored in the zeal to "double last year's sales." Regardless of what the smiling face in the dental advertisement may say, it is well to remember that there is no "sure technic" in either radiography or anesthesia.

Despite advances in the study and application of local anesthesia, a growing interest is evinced today in general anesthesia for the extraction of teeth and minor oral surgical procedures, as evidenced by the formation of anesthesia societies, large attendance at postgraduate courses in general anesthesia, etc.

Situation of Operating Room

An operator contemplating the use of general anesthesia in his office should so arrange his suite as to have a soundproof operating room. A safe way of attaining this end is to construct the suite so that at least three doors separate the operating room from the waiting room. This step is of immense practical value. In these days, when so many of our patients are of the high-strung, neurotic type, they will often wake from a *sound anesthesia* and indulge in loud, hysterical sobbing and moaning, which, if heard, would be terrifying to anxious friends and relatives in the waiting room, to say nothing of the other patients present.

Pre-Operative Routine

Whenever possible, patients should be instructed to abstain from all food other than orange juice for alkalinization and a piece of dry toast a few hours prior to the operation.

Premedication is advisable in the highly neurotic types where multiple extractions or other difficult operations are contemplated. Chloretone, 10-20 grs. taken one hour before induction, is helpful in many instances. Morphin should be used rarely if ever, because it disguises two most important anesthesia symptoms, namely, the respiratory and the pupillary. In addition, many cases of persistent post-operative

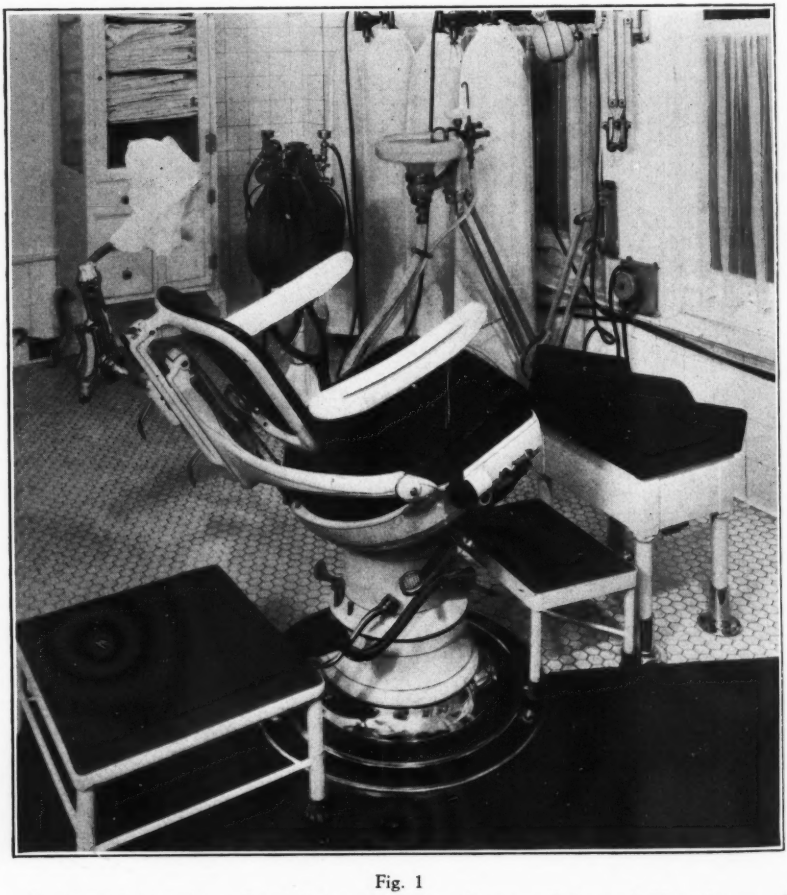


Fig. 1

Foot-rest of the ordinary dental chair replaced by a leg-rest and footstool. Note the concealed straps.

vomiting have been definitely related to its use. Atropin, because of its action on the parasympathetic nerves of the salivary glands, is efficacious in maintaining a dry field and may be used when operating for the removal of impacted teeth. Its chief disadvantage is its simultaneous effect in expanding the pupils of the eye, thus interfering with vision for some hours after administration.

Toileting should be a routine procedure before anesthetization. Failure to carry out this detail of technic often provokes much needless embarrassment.

Operative or financial problems should be discussed before the patient is seated in the chair, preferably not with nor in the presence of the patient. Anything which may disturb or upset the patient's state of mind is to be carefully avoided.

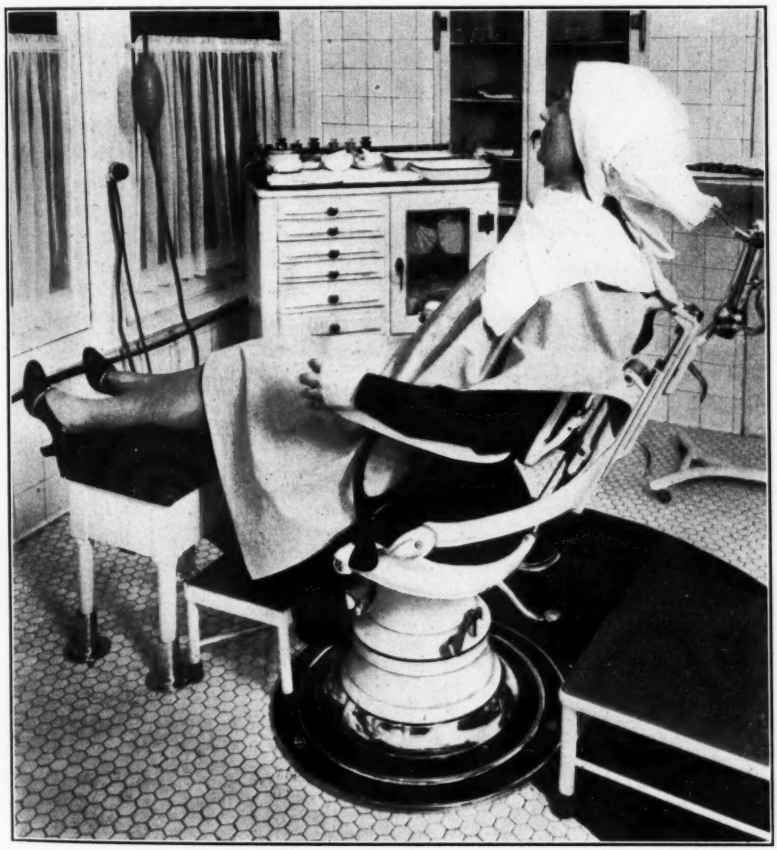


Fig. 2
Showing legs in extended position. Note elimination of the foot-rest as a brace.

The reception into the operating room should receive the operator's undivided attention. The patient must be made to feel that he or she is the only concern of the operator and his assistants. A calm, assured, confident air is invaluable in gaining his trust and faith.

Operative Problems

The sudden interruption of the anesthesia by vomiting is one of the greatest problems confronting the oral surgeon. Aside from its purely irritating aspect, usually necessitating the waking of the patient, changing of throat pack, mouth prop, towels, drapes, etc., the very real danger of vomitus entering the trachea must be constantly borne in mind. Early recognition of the symptoms preceding vomiting and prompt action are essential in coping with this emergency.

The photographs accompanying this article portray a method of rendering to the dental chair some of the mechanical and physiological advantages of the operating table. Figs. 1 and 2 show the chair with the foot-rest removed entirely and replaced by a leg-rest and a small footstool. The advantages of this arrangement are obvious. With the legs in the extended position, there is nothing the patient can use as a brace. The work which the heart must perform to maintain circulation is lowered, since the blood does not have to be carried up from a dependent foot-rest. This advantage simulates that of the operating table, where the legs are on the same plane as the heart, which position reduces the work of the heart to a minimum. This technic is especially beneficial for cases of low blood-pressure or cardiac impairments of any type, when general anesthesia is elected.

The leg-rest and chair are both securely bolted to the floor. Concealed beneath the leg-rest and chair are firm straps, which are permanently attached and may be brought into instant use (Fig. 3). The author has arranged a detachable set of wristlets for restricting movements of the hand and arm, which may be kept on the arm-rests at all times or may be attached when desired. This arrangement is a fool-proof method of handling the struggling patient competently and quickly.

Of those men who claim that they never have patients who struggle, one can only be sincerely envious, if skeptical. In this connection a word about the moral obligation assumed by the general anesthetist may not be amiss. While the court may hold that the dentist is not responsible for the unconscious acts of a patient under anesthesia, the moral obligation on the operator to prevent the patient from seriously injuring himself is evident. Heidbrink recently recited cases where patients in wild, uncontrolled excitement have dragged dental chairs about the room, creating havoc in the office and sustaining personal injury. One or two cases are known of patients leaping insanely through dental-office windows to their death while under the influence of an anesthetic. A contemporary exodontist reports 100,000 anesthesias without a fatality. These figures lose much of their impressiveness when we learn that this man was unfortunate enough to have lost one of his patients through his window. There can be no more sincere plea than one

for statistics which will reveal all the facts truthfully.

Fig. 3 demonstrates the preliminary induction with the face mask instead of the usual nasal inhaler. When surgical anesthesia has been established under the mask, a change to the nasal inhaler is effected. The superiority of this type of induction is ably pointed out by McLaughlin, of Bridgeport, in THE DENTAL DIGEST of March, 1931. When nasal induction is used, some patients report a feeling of strangulation during the early moments. This sensation will often affect the smoothness of the entire anesthesia, inducing struggling and nausea. The patient, admitting that no pain was experienced,

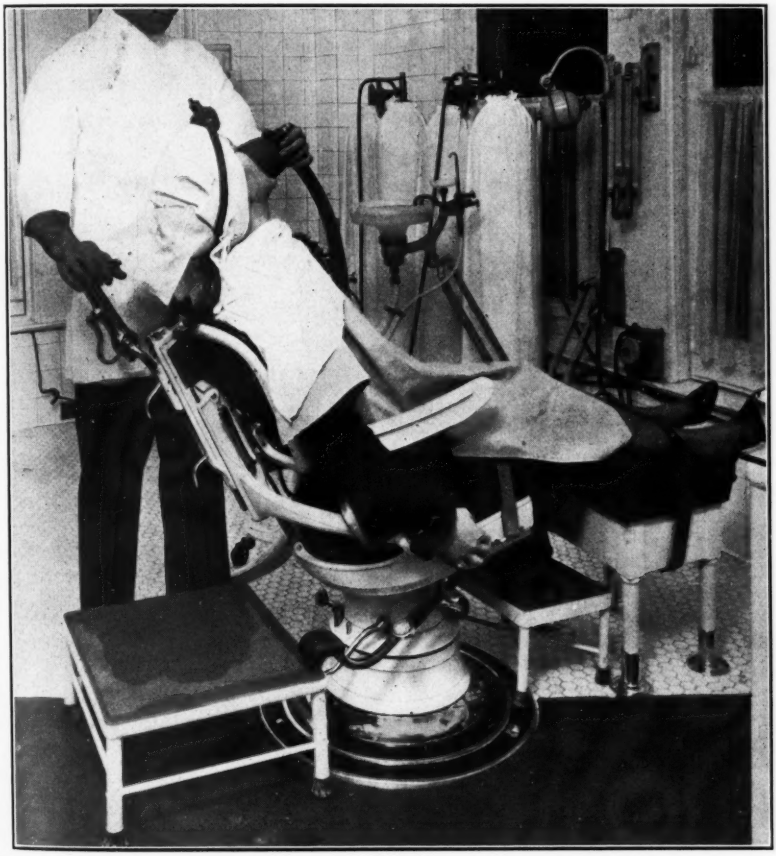


Fig. 3

Inducing anesthesia with the face mask. Note straps and wristlets applied. These should be used at the discretion of the anesthetist.

will take a distinct dislike to general anesthesia. I merely touch on some points in connection with this new method and recommend McLaughlin's paper for your perusal.

Anesthesia may be induced under the mask either slowly or rapidly, depending upon the anesthetist's preference. It is suggested that after the desired plane of surgical anesthesia has been reached, it be maintained for thirty seconds before switching to the nasal inhaler. In Fig. 3 you will observe that to switch to the nasal inhaler it is necessary to detach the tube from the face mask and insert it in the nasal attachment, simultaneously dropping the nasal inhaler over the nose. The

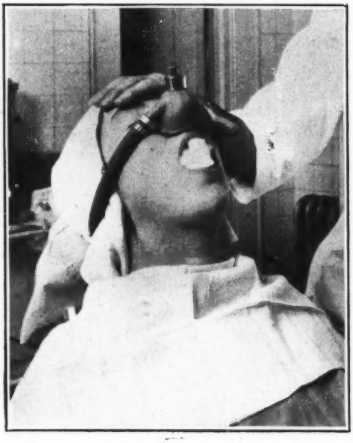


Fig. 4

Showing maintenance of anesthesia with the nasal inhaler. Note the gauze pack in position at the orifice prior to operative intervention.

gauze pack is inserted at once to arrest mouth-breathing, and the pressure slightly raised to encourage nasal respiration (Fig. 4). This method of effecting the change is rather awkward and has been displaced in the machines of this office (since taking these photographs) by adding the McLaughlin attachment (a two-way valve), which makes possible an exchange from mask to nasal inhaler in from one to two seconds. For short operations, such as incising an abscess or removing one or two loose teeth, the work can be readily completed with the face mask alone. We have observed that if the switch is made at the height of inspiration, not a single breath is lost.

Practical Suggestions

A list of practical suggestions relating to exodontia under general anesthesia is appended:

(1) During induction absolute silence should prevail. Conversation or other sounds will distract the patient.

(2) The interruption of the rhythmic opening and closing of the exhaling valve should be immediately investigated. Cases of embarrassed respiration will improve if operative procedures are temporarily stopped, the gauze pack brought forward and the jaws relaxed.

(3) Carbon dioxid, either mixed with oxygen or in a separate tank, should be a constant element of the equipment. Carbon dioxid is a true respiratory stimulant; oxygen is *not*.

(4) Rubber mouth props should be carefully placed to prevent dislodgment, which may hinder or defeat the operation.

(5) Rachet types of mouth gags should not be used on loose teeth. If this type of gag is used, two details are important. Deep anesthesia with its contraction of jaw muscles must be avoided to prevent leverage between

the gag and the teeth. In addition, a cotton roll or piece of gauze placed between the lips and the teeth will prevent the lips from being pinched and lacerated during the operation (Fig. 5).

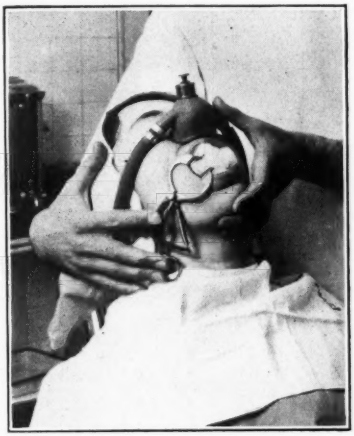


Fig. 5

Demonstrating the use of the rachet type of gag. Note the gauze rolls between the lips and teeth, preventing laceration of the lips by the gag. Also note the anesthetist supporting the chin, nasal inhaler and gag.

(6) Mouth packs should be selected for their absorptivity, ease of manipulation and their ability to prevent mouth-breathing. Small, medium and large sizes should be available. Brown, of Trenton, has suggested a cellulose paper filler within the gauze pack for increasing the absorptivity and for making mouth-breathing more difficult. Before inserting the pack the tongue should be brought forward to prevent its backward displacement.

(7) For the removal of all maxillary teeth the sterile towel is raised into the mouth (Fig. 6). This maneuver will prevent bits of alloy, enamel and roots from falling into mandibular sockets or getting lost in the floor of the mouth. It also protects the mandibular teeth against the sudden delivery of a maxillary tooth.

(8) In operating on mandibular teeth gauze or cotton rolls placed lingual to the teeth and beneath the tongue will protect the soft tissues of the floor of the mouth from injury.

(9) In multiple extraction cases the amount of blood in the mouth can be considerably controlled by packing into each alveolus a strip of iodoform gauze immediately upon delivery of the tooth.

Fig. 6

Demonstrating the use of towel dam technic for the removal of maxillary teeth. Note how the inhaler lifts from the nose if it is not supported.

(10) Every anesthetist should be thoroughly familiar with an accepted standard method of artificial respiration. Respiratory and cardiac stimu-

lants in the form of hypodermic units should be on hand at all times, despite the fact that they are rarely needed.

In conclusion a definition of success in general anesthesia work may be apropos. Success in this service, then, may be defined as a combination of a *peaceful* induction, performance of the contemplated surgery thoroughly yet without unduly prolonging the period of maintenance, and, finally, carrying the patient in a safe plane of surgical anesthesia completely oblivious to pain stimuli.

130 Market Street

Simplified Technic for Removal of Fractured Roots*

By M. HILLEL FELDMAN, D.D.S., New York, N. Y.

Author of Textbook on Exodontia; Instructor in General Anesthesia, Allied Dental Council, New York; Chief of Dental Department, Lincoln Hospital, New York; Founder and President, The Society for the Advancement of General Anesthesia in Dentistry.

The fracture of a tooth immediately attendant upon the primary application of force is always associated with dread by the patient, and also quite frequently by the dentist. To the patient it means a hard time ahead. To the dentist it may mean, at best, a serious delay to his day's appointments, upsetting his routine and causing a costly setback in his work for others who have put aside the time required by a visit to his office. Unless a tooth is removed in a reasonable length of time and with a minimum of psychic shock and prospect of post-operative suffering, I feel that the operation is a failure because, to my mind, the *eventual* delivery of a root of a tooth is not the only goal of an exodontic procedure. The root must be delivered in such a manner as to make as little insult to the tissues as possible and to give the individual operated upon the least possible degree and period of post-operative discomfort.

I have heard men boast of removing a root which finally yielded to their efforts and hopes and the patient's prayers after an hour and a half. To me such an operation is a dismal failure and something which should be avoided if the operator shows any common sense at all and has any regard for his patient's feelings. There are very few teeth which should consume anywhere nearly that amount of operative time, let me assure you. I refer here not to roots which have been displaced during the operation to deeper tissues and structures but to those which are still, after some effort, encased in the same area which they occupied at the outset. The technic which I have employed with success for many years is one so simple that it enables younger practitioners to accomplish swift recovery of fractured roots in a minimum amount of time, with the very least degree of surgical attack on the tissues, and results in a definite reduction of post-operative complications. It is a technic which requires an armamentarium with which the general practitioner is thoroughly familiar and at home, to wit, the dental engine. I employ the engine drill and a simple lever instrument, which bring to a difficult situation a rather simple solution, a solution which should gladden the heart of a general practitioner who may be so situated geographically that he is far removed from the specialist and is necessarily thrown on his own resources and ingenuity.

When a root fractures, deeper engagement with the beaks of the forceps usually follows and delivers the remaining portion. This is the accepted orthodox technic for roots which do not fracture too deep below the gingival area, at the cemento-enamel junction,

* Read before the New Haven Dental Society, January 8, 1931, and the Eastern Dental Society, Philadelphia, April 16, 1931.

that is, if the beaks of the forceps are directed between the soft tissue and the bony investment of the root. It is certainly not permissible to close the beaks over the soft tissues and remove tissue which is needed for healthy repair. When a root fractures considerably beneath the ridge line, other means are brought into play for its delivery. These usually consist of rongeurs, levers, chisels, mallets or drills. Some operators develop unusual skill with one or another of these measures. Some are able to exercise tremendous power with the hand against a chisel unaided by a mallet. At any rate, the aim is to remove the encasing bone to such an extent as to facilitate the delivery of the root. Delivery of a fractured root is usually effected through the alveolar opening or by the buccal or labial route. Rarely, if ever, is a root removed through the lingual or the palatal surface. To do this would cause damage to surfaces which should retain their original contour for the restoration work. The lingual and palatal areas take up the greater share of the tissue stress of the restorative appliance. For this obvious reason all surgery, by whatever means, is properly executed by way of the buccal and labial routes.

In order to make a detailed survey of the means which I employ for fractured-root delivery, let us take up the question by commencing with the incisor teeth.

Maxillary Incisors

While it may be possible to effect a surgically clean removal of a maxillary incisor root by forceps closure or by leverage, I fel that the better procedure is to reflect the mucoperiosteum labially as the first step. When I say "surgically clean," I have reference to the irregularity of the alveolar margins and not to the bacteriologic aspect of the operation. One has but to reflect the mucoperiosteum following deep alveolar forceps application to verify the fact that the beaks of the forceps leave irregular margins, which may sequestrate and cause petty irritations and thus delay happy healing.

With the mucoperiosteum reflected, the beaks of the rongeur are applied to the labial alveolar plate and the process removed until the fractured root surface may be seen by direct inspection.

A narrow-blade lever is insinuated along the palatal aspect of the root. By a gentle turning movement of the lever the root is usually dislodged quickly. The palatal alveolar wall is used as the fulcrum. This technic is applicable for centrals, laterals and cuspids in the maxilla. Should one experience difficulty in dislodging the root with the lever, an opening may be drilled through the labial alveolar plate and the lever used to engage the root by way of the opening thus made. The opening is best made with the author's flat-sided spear drill and deep enough to engage slightly the cementum of the root. The lever most suited for the delivery is the author's design of an improved heavier type of the Crane pick and is known as the *patholever*.

Following the root delivery, all extending alveolar margins are trimmed with rongeur and curet and the mucoperiosteal tissue replaced. Suturing is indicated only when the flap tissue shows a tendency to draw away when replaced to its points of detachment. If the lines of incision are made in such a

way as to diverge as they pass toward the apical region, there is a good chance of the tissue resting on solid bone when replaced. Parallel incisions made too close laterally to the area of surgery usually cause the flap to sag inward toward the palatal wall.

MANDIBULAR INCISORS

For incisor teeth in the mandible I suggest the following variation. After reflecting the mucoperiosteum and removing the labial alveolar wall with the rongeur as far as the root surface, it is good practice to introduce the drill in all cases. Lever application, as used for maxillary roots, is not feasible because one would have to stand on one's head to use the lingual alveolar plate as a fulcrum to correspond to a similar procedure in the maxilla. The drill permits the easy employment of the lever through the labial plate and the upward delivery of the apex.

MAXILLARY FIRST BICUSPIDS

The maxillary first bicuspid gives much trouble, due to its thin bifurcated roots. Where there is a fusion, one is not bothered with fracture unless an exostosis complicates matters.

The first step is the mucoperiosteal tissue dissection, making two lateral incisions so as to expose the operative field thoroughly. The rongeur is then applied to the labial alveolar plate and the bone trimmed down as far as the fractured root surface. This is done just as well for labial or palatal or double root fracture. If the labial apex is the one retained, the drill is directed through the labial alveolar plate into the cementum of the root and the patholever used to engage the root through this opening. Sometimes it may be found possible, if the bone is not too thick labially, to apply the thin-beaked forceps for labial delivery of the apex. One beak is passed into the vacant palatal alveolus, and the other is applied over the bone encasing the root labially. Simple crushing force will dislodge the apex, followed, of course, by trimming with curet and rongeur.

When the retained apex is the palatal, the drill is passed through the septum at an almost right-angled approach from the labial, and the downward dislodgement with the patholever is then effected.

When there is a deep fracture of a fused root, the drill may be used in either or both of the following ways. The drill is inserted from the labial aspect into the bone and root substance and then another opening is made at the palatal aspect of the root against the palatal alveolar wall. This permits a double approach to the retained root and affords a point of entry for effective leverage.

MAXILLARY SECOND BICUSPIDS

The maxillary second bicuspid may be handled as described for the fused first bicuspid. Second-bicuspid root apices sometimes relate directly with the floor of the maxillary sinus. It is well to be cautious in directing the lever so that no pressure is applied which might propel the apex into the sinus. Leverage must be applied with the palatal fulcrumage, so as to move the root labially, if the operator is employing the direct alveolar approach from below. Right here it is well to point out the merit of

the open-view method in this operation. By a proper exposure of the field the operator is in no danger of forcing the apex up into the maxillary sinus. When working in the blind channel of the alveolus, there is this danger undoubtedly. I can see no advantage in groping in the dark for these apices. Even with successful delivery one is not in a position to discover and remove all the minute particles of bone which the lever produces in dislodging the apex. These spicules will give rise to suppuration and delayed healing. It is certainly more in line with conservative surgery to operate by the open-view alveolar avenue, even though it appears on the surface to be a radical step to advise for a general practitioner.

Mandibular Bicuspids

The mandibular bicuspids frequently fracture and are a difficult problem to the dental surgeon, perhaps to an even greater extent than any other tooth in the mouth. I hear of men removing mandibular bicuspid apices without resorting to a soft-tissue dissection. Perhaps they either are unusually gifted or think that they have the apex out, whereas in reality they are deluding themselves. I should like to see such a miraculous operation sometime. I really cannot conceive of the possibility of coaxing a deep fractured root out of its crypt without labial relief of soft and hard tissues. Some operators make the boast that they never have to make a flap; they say they work from within the alveolus at all times. Perhaps they do not make a *flap*. But one thing they certainly can take credit for making, that is, a *ditch*. Tissue is gouged away with no regard for the later demands of prosthesis. Where they do not make flaps, they cut ribbons. Instead of a neat surgical operation with clean healing there results a ragged, tattered chasm, all in the name of conservative surgery, without resort to flaps.

It is sometimes possible to achieve sufficient operative radius by making a single line incision for the reflection of the mucoperiosteum. Usually I find a mesial as well as a distal incision necessary for preparing the field in the vicinity of the mandibular bicuspid. Following the soft tissue dissection, the beaks of the rongeur are closed upon the bone labially, in order to remove the tissue as far down as the root fracture. The spear drill is then directed into the labial alveolar wall and slightly into the root substance for engagement by the patholever. In my early work with this principle I did not remove the labial plate as a preliminary measure before sending my drill into the bone and root. This has now been improved and there is no danger of the drill going astray laterally and doing damage to one of the adjacent tooth roots. By cutting down on the root with the rongeur before applying the drill we are enabled to guide the drill path correctly into the center of the root rather than into the lateral alveolar area or adjoining root surfaces.

Sometimes the patholever will not completely deliver the root thus engaged through the bone path made by the drill. In such event it is necessary to make an additional drill opening lower down toward the apical periphery. The only serious complication to prevent rapid delivery of such an apex is an exostosed condition or a marked curva-

ture. For an exostosed apex it is advisable to penetrate the mass of the exostosis in the center, hollowing it out. The lever will then easily pry out the portions of root substance. For extreme curvatures, if one removes the labial alveolar plate carefully and guides the drill according to the indications of the radiograph, there should be no difficulty. When the mandibular bicuspid root which we are to remove stands unrelated to any neighboring roots, I find it convenient to make a mesial approach with the drill rather than in the usual manner on the labial surface. The mesial bone path gives one a firm ridge as a fulcrum for the upward delivery.

An important phase of this technic which should be emphasized at this time is the angulation of the drill as it penetrates the bone and root. Instead of passing into the bone at a direct angle I find it advantageous to point the drill somewhat downward for the bicuspids. This affords a better fulcrum for the patholever.

In planning to remove a deep fracture of a mandibular bicuspid root around which there has been a complete filling-in of bone the drill is used to encircle the root fragment with a series of contiguous openings. The lever will readily lift off this plate of bone thus weakened, exposing the root.

MANDIBULAR MOLARS

The principle of the spear drill has several variations when applied to mandibular molar roots. For fractures which leave two roots in place the drill is directed at the bifurcation so as to create a bone path under it. If the fracture has occurred at the gingival border, no dissection of the soft tissue buccally is indicated. If, however, there is a deep double fracture, conservative surgical principles dictate a soft tissue dissection from the buccal alveolar plate so as not to cause mucoperiosteal injury. Removal of bone with the rongeur on the buccal plate as far down as possible is done in the same manner as described for bicuspids.

When the molar roots are widely divergent, a single bone path is not sufficient. It is then necessary to make one path lead toward each root from the same starting-point. In this way it is possible to carry the patholever into direct contact with each root separately.

In the usual case of a deep molar fracture of a single root easy delivery may be effected by carrying the exolever blade point down into the vacant alveolus and directing it against the septal wall holding the retained root. If there is not too much apical spread, the lever toe will cut through and readily reach the retained root. If, however, there is a marked divergence, and if, in addition, the bone is rather dense, the auxiliary assistance of the drill plays an important rôle in the operation. The drill may be introduced through the septum toward the retained root, from above downward, or a buccal approach made as already described.

Fused mandibular molar root fractures are handled as described for exostosed mandibular bicuspids. The drill penetrates into the root mass, and either direct lifting force is brought into play or splitting of the mass is effected. Withdrawal and repenetration by the drill several times in order to create a larger opening are frequently necessary.

Mandibular Third Molars

In removing a deep fracture of a mandibular third molar a mesial inclination for reflection of the mucoperiosteum is made. The line of incision commences at the interproximal papilla between the second and third molars and is carried forward toward the second molar as it passes to the buccal fold. This facilitates the subsequent reattachment of the flap and prevents exposure of the bone by the sagging inward of the reflected tissue. The drill is directed into the root from the buccomesial area of the bone. The second molar should not receive any fulcrum stress. The outer alveolar wall receives all the lever pressure.

Maxillary Molars

Maxillary molar root fractures are easily taken care of by the drill and lever technic. When one of the buccal roots fractures, the usual method which succeeds in delivering it is by engaging the bone and root by the beaks of the forceps and crushing the beaks together. But, if the buccal bone wall is very dense, no degree of hand pressure on the forceps will avail. The beaks will not cut through the hard resistant tissue to free the root. It is then that the drill is brought to our aid. The buccal soft tissue is dissected from the bone, the rongeur used to cut the buccal alveolar wall as far as the root, and the drill directed into the bone and root slightly above the exposed fracture surface. The patholever will readily carry the root downward.

The fracture of a palatal root is easily corrected by the drill technic. The steps carried out are, in order: (1) reflection of the buccal mucoperiosteum, (2) cutting down on the buccal and septal walls to create a free and wide access and visibility of the retained root, and (3) direction of the drill from the buccal alveolus toward the palatal root at as nearly a direct right angle as it is possible to achieve. Care should be taken lest in an upward vibratory move the root be dislodged upward into the antrum. The ease with which these palatal roots are thus freed is perhaps one of the most gratifying experiences I have had with the drill technic.

Palatal approach to remove a palatal apex is not desirable because of the possibility of doing injury to the palatal blood-vessels and also delaying healing. Retention of the original contour of the palatal area is very favorable for sound tissue stress of prosthetic appliances. Our aim should always be this ultimate ridge health.

One of the most difficult fractures one is confronted with is that of a maxillary molar with a webbing of the palatal with one of the buccal roots. One succeeds with the third root and finds that the reapplication of the forceps beaks cannot crush the fused buccopalatal mass presented by the webbing of the remaining buccal root with the palatal. It seems that when such a tooth presents, the bone encasing it is correspondingly dense. The aim of the operator here should be to split the fused mass. The drill is of inestimable assistance to this end. The point of entry is from the fractured surface below into its center. The lever does the rest. The roots may then be removed as single roots with the forceps beaks.

CONCLUSION

In concluding this presentation I desire to stress the underlying principle of my technic. It is this: I endeavor to prepare a bone path so as to carry my lever to a point alongside, or in contact with, the root to be removed. This point of lever application is the most strategic point at which successful delivery may be expected. A minimum degree of surgery is needed and a far less amount of energy is expended by the operator in the process. As for the patient, in my experience, post-operative discomfort is appreciably reduced.

730 Fifth Avenue

[ULTRA-VIOLET]

Irradiation has entered the dental field as a therapeutic measure. The claims of beneficial results are enthusiastically proclaimed, despite the differences in technic of operators. On the other hand, there are a number who are skeptical as to many of the so-called applied advantages of the ray, calling for further research before its use can be definitely advocated. No detail report of controlled experiments for preventing post-operative pain has come to our attention. Our own investigations on 476 cases show that there has been no less pain after an extraction that has been followed by irradiation than after one that has not.

—GREENBERG.

Another Step Forward in the Progress of Root-Canal Therapy

By FRITZ A. BEYER, D.D.S., New York, N. Y.

Three years ago Dr. H. T. Stewart offered for my investigation a new filling material for root canals. It consisted of seven parts of tin, one part of gold, and enough mercury to make a mixture of the consistency of putty. A little later he changed that formula to two parts of gold, one part of tin, and the same amount of mercury. Today he incorporates a small amount of platinum amalgam to the latter mix. Although I have utilized all of the amalgams to my satisfaction, I find that the one with the platinum content is a far superior mixture.

To utilize the above material, the canal must be enlarged to a greater width than is necessary when gutta-percha or rosin chloropercha is used. Although this entails more labor and skill by the operator, it insures better drainage through the canal and, therefore, a better end-result.

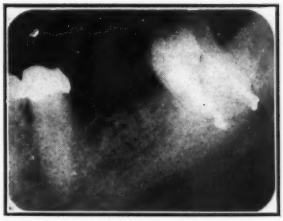
Pathological rarefactions of long standing are cleared up in from six weeks to a few months. Root canals of a doubtful nature that have been filled with guttapercha I now fill with the material described above and have obtained gratifying results. Of all the root canals that I have filled with the new material I am still waiting to see or hear of any failures or untoward results. To the conscientious operator who feels that root-canal therapy still has a place in the conservation of the teeth I can without compunction endorse this new material.

The cases illustrated are a few of the many treated by Dr. Stewart's method.

CASE 1

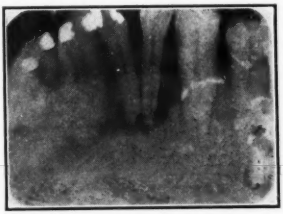
Tooth before treatment, October 14, 1930.

Distal canal filled December 2, 1930.

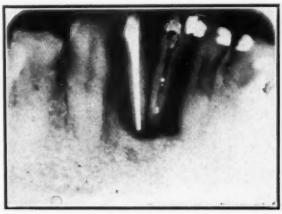


Tooth six weeks after treatment.

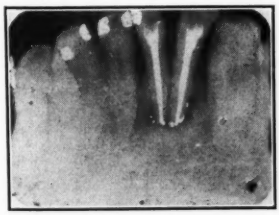
CASE 2



Well-marked area of rarefaction present for twelve years before treatment on July 9, 1929.



Tooth filled July 23, 1929.

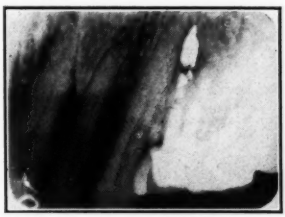


Tooth after the treatment was completed, September 30, 1930.

CASE 3

Tooth at beginning of treatment, October 14, 1929.

Canals filled January 25, 1930.



The filling forced beyond the apex and the excess entirely eliminated through the fistula at the buccal canal. New bone is filling the area, May 21, 1930.

A root-canal filling, to be conducive to health, should have the following properties:

(1) It should be devoid of any painful post-operative trauma.
(2) It should be capable of being inserted in a cool state.
(3) It should be free of any possible shrinkage.
(4) All recesses or auxiliary apertures should be hermetically sealed.
(5) Upon insertion the material should displace all body fluids and prevent the body fluids from returning.
(6) Its presence beyond the apex should stimulate healthy regeneration of tissue.

505 Fifth Avenue

[TRENCH MOUTH]

Vincent's infection is a communicable disease, endemic and of widespread prevalence. In certain instances, owing to environment or close association, it may become epidemic. It is presumed to be only mildly communicable where proper treatment is given and precautions are taken, such as thorough sterilization of cooking utensils, dishes and drinking cups.

The exact method of transmitting it has not been agreed on, but since the organisms are present in a large number of mouths, an unsuspecting person may be a carrier and transmit the organism, harmless to himself but probably harmful to others.

—WRIGHT.

The Present Status of Periodontoclasia*

By RALPH B. SNAPP, D.D.S., Winchester, Va.

It is an acknowledged fact that modern methods for the treatment of periodontal disease (so-called *pyorrhea*) have proved to be successful. The splendid results now attained can be traced in large part to the progress made in the linking up of etiology and treatment. The recent work of Box, Stillman, McCall and others in the profession has not only aided in solving various problems in periodontoclasia, but has also enlightened the path toward the science of the prevention of dental disease.

Dental problems that have baffled many in the profession in the past are in a fair way under control today. Especially is this true of the science of periodontoclasia when its diagnosis, etiology and treatment are fully understood. Not only has the research work accomplished by our scientists enabled us to recognize predispositions to and incipient lesions of periodontal disease, but their contributions have taught us how to link up etiology and treatment. What greater satisfaction can be derived than the realization that we can prevent an initial lesion in preference to caring for a more advanced case?

THE GENERAL PRACTITIONER AND PERIODONTOCLASIA

Beyond a doubt there is a vital necessity in periodontic practice for both general practitioner and specialists. The general practitioner must make himself more of an expert in periodontia because it is the most fundamental thing in dental practice, since such diseases are easily prevented and are not difficult to treat if taken in their incipiency, and, also, because a handful of specialists cannot hope to meet the requirements of the public. Periodontic practice is no different in principle, as compared to general practice, from the other branches, with the tremendous exception that the preventive side fits in more closely. Periodontia should be the first and foremost at all times in general practice.

The dentist must recognize the case that should be referred to the specialist, the case which the specialist is better qualified to diagnose and treat because it is unusual or difficult, or because, for any reason, the dentist does not choose to handle it. The public should be taught that each case must be started with a general practitioner, who will select in his patient's interest that specialist most competent to do the particular kind of work required. But the chosen specialist must keep in contact with the general practitioner. No specialist should be tolerated who has not had at least five years of general practice following his preliminary education. Since dentistry in itself, being practiced within four walls, is none too broadening as a vantage from which

*Read before the Shenandoah Valley Dental Association at Harrisburg, Va., Nov. 13, 1930.

to view life in general, a subdivision is prone to make it excessively narrowing.

It is my opinion that the dentist in general practice not only should treat the incipient cases of periodontoclasia, but should be equipped in every way to practice this greatest prevention in dental medicine today. The supporting structures of the teeth are the real foundation of all dentistry. Why should they be so sadly neglected or eliminated from the general practice of dentistry?

Nearly all cases of periodontoclasia or pyorrhea could be avoided if the signs pointing in that direction were recognized by the general practitioner and treatment and preventive measures instituted in time. The smallest deviation from the normal in a mouth is important enough to call for a remedy. Not infrequently patients come to my office and say, "I told my dentist that my gums bled when I brushed them, but he looked in my mouth and said they were all right, that many people's gums bled when they brushed them." Bleeding of the gums always indicates something wrong and is the most frequent signal preceding periodontoclasia. Normal gingival tissues are a light, even pink, firm and continuous about the teeth.

Incipient Periodontoclasia

In order to discover an incipient periodontoclasia, or an incipient gingivitis, which is the preceding stage, it is necessary to examine minutely the area surrounding each tooth. The color of the tissue must be noted carefully and then a probe passed carefully about the gingival margin to see whether there is any break in the attachment to the cementum. The finger of the operator may be used in palpating the tissue to see whether there is any unusual swelling or any oozing of blood or pus from the tissue under pressure. The dentist must first know what normal tissue feels like. A casual examination with a mouth mirror will not reveal these symptoms. Time and again the periodontist sees cases in which the superficial calculus has been removed and the subgingival remains. The presence of subgingival calculus causes an inflammation of the area over it, which may be very slight but nevertheless is evidenced by swelling and redness. Also, it frequently shows as a dark line along the margin of the gingiva. Every bit of calculus must be removed if the patient is not to develop periodontoclasia.

The dentist must be familiar with the appearance of the gingiva in certain systemic conditions. Bismuth and mercury cause a dark line about the margins of the gingiva which looks very similar to the shadow of subgingival calculus. A probe will tell the difference. Now that bismuth is so frequently used in the treatment of syphilis, we see the line more often.

It will be seen, therefore, that the responsibility for the prevention of periodontoclasia rests almost entirely on the general practitioner, as it is he who sees the mouth first. He must be thoroughly familiar with the appearance of normal gingival tissue so that he may recognize pathologic conditions when they occur, and he must be able to differentiate local from general systemic causes. On him there also devolves the responsibility for so constructing his reparative work that perio-

dontoclasia cannot possibly result therefrom.

So much emphasis has been placed on the use of the x-ray in diagnosing pathologic conditions of the mouth that the dentist is liable to place too much dependence on it. A roentgenogram is of little use in diagnosing incipient gingival lesions, so the dentist must rely on his eye and on his sense of touch.

Practically all the local causes of periodontoclasia are under the control of the dentist, and those causes which are not directly under his control he must be familiar with. Consequently a tremendous responsibility rests on the shoulders of the general practitioner in the prevention of this disease.

ETIOLOGY OF PERIODONTOCLASIA

Several theories have been proposed in the past to account for the incidence of periodontoclasia (so-called *pyorrhea*). Of these the theories of infection and local irritants have received the most attention and have proved to be the most fruitful. It has been known for a long time that periodontoclasia is an infection. Studies have been made for many years in an effort to isolate a specific bacterium as the cause. These efforts have always resulted in failure. It is now recognized that the bacteria that cause the infection are non-specific in character and are common inhabitants of the mouth.

The part played by deposits of tartar and other accumulations on the surface of the teeth has been so prominent and so well recognized that many have claimed that periodontoclasia was simply and solely a filth disease. They have claimed also that it could not occur if the teeth were kept free from all deposits and debris. This theory was back of the idea of cleanliness as the foundation of mouth health, a theory which has been so impressed on the dental profession as to be regarded almost as a religious tenet.

Tartar and other deposits, as well as overhanging and bad margins of fillings, ill-fitting crowns, improper contacts, injuries, etc., are an important factor in causing so-called *pyorrhea,* because they favor infection of the gingival tissue. They do this by the mechanical irritation which they produce in contact with these tissues, and this irritation, when prolonged, lowers the resistance of the marginal gingiva against infection. Thorough removal of these deposits is important, but this removal alone does not build up resistance in the tissues, and it is now known that bacteria can infect the gingiva, even when no deposits are present.

Another local irritant which has received much attention in late years, and whose importance is very generally accepted, is known as *traumatic occlusion.* This is an excessive stress which is brought to bear on individual teeth through the irregularity of their placement in the jaw or from fillings and bridges whose occlusal surfaces may be out of harmony with the occlusal surfaces of the natural teeth. That traumatic occlusion plays a most important part in the production of periodontal diseases is now unquestioned. This etiological factor has been found dominant in over 75% of the cases treated in various pyorrhea clinics over the country, and in view of this fact it has become necessary to teach its correction in considerable detail.

There has been much misunderstanding as to just why and how traumatic occlusion produces periodontal disease. As a matter of actual fact, traumatic occlusion does not cause this disease directly. What it does is to cause irritation to the supporting tissues of the teeth, which results primarily in a derangement of the blood supply to these tissues. The blood supply of the gingival tissue is derived from the pericementum, the periosteal blood-vessels and the alveolar gingivae. The fact that the blood supply is partly derived from the pericementum explains why there is so much congestion in traumatic occlusion. As this progresses, a congestion results, which lowers the resistance of these tissues to the infecting bacteria which are always present in the mouth. This is manifested first in the marginal gingiva, and for a considerable time the infection is confined to this tissue. In the early stages the inflammation of the marginal gingiva may appear to be slight and relatively unimportant. It is very important, however, to detect this early sign of infection and to begin at once to build up the resistance of these tissues. For, if this early infection is allowed to go on unchecked, it will certainly invade the pericementum and bone, whose resistance has also been lowered by the traumatic occlusion.

The progressive tissue changes in the formation of pus or a pyorrhea pocket are as follows:

(1) A reduced resistance of the epithelium of the gingivae by (*a*) local irritation and (*b*) constitutional conditions.

(2) Infection of the gingivae.

(3) Carrying of the infection by lymphatics into the peridental membrane.

(4) A break in the peridental membrane, leaving short fibers attached to the cementum and short fibers attached to the bone.

(5) Destruction of the short fibers attached to the cementum and of the cementoblasts.

(6) Cementum becomes pus-soaked.

(7) Disappearance of the short fibers attached to the bones and also of the corresponding area of bone.

(8) Pocket lined with inflammatory connective tissues partly covered by low-quality epithelium.

Local Irritation

Under the first heading, reduced tissue resistance by local irritation, in 1,000 areas examined, salivary calculus made up 325 areas or 31% of all areas, serumal calculus made up 135 areas or 13% of all areas, and injuries made up 575 areas or 55% of all areas. The injuries consisted of the following:

(1) Bad margins of fillings and crowns.

(2) Improper contact of fillings and crowns.

(3) Malposition and malformation of teeth.

(4) Separation following extractions.

(5) Dental caries.

(6) Worn contacts.

Treatment of Periodontoclasia

The treatment of periodontoclasia or pyorrhea is divided into four stages:

(1) Correction of the traumatic occlusion.

(2) Removal of all factors which produce mechanical irritation of the gingivae, such as tartar and other deposits, overhanging fillings, ill-fitting crowns, etc.

(3) Treatment of the pocket.

(4) Building up of tissue resistance.

CORRECTION OF TRAUMATIC OCCLUSION

Regarding the first stage, the correction of the traumatic occlusion, experience has shown that when readjustment of the occlusal relations has been completed prior to scaling and curettement, with a period of rest intervening, the tissues tend to bleed less freely during these operations. Further, it is common knowledge among periodontists that when scaling and curettement are carried out after occlusal readjustment, the attending pain or discomfort is as a rule greatly diminished. For these reasons the correction of the occlusion is done first.

We establish our balance in correcting traumatic occlusion by:

(1) Procuring protrusive balance.

(2) Securing relief in central occlusion.

(3) Bringing about lateral movement without buccolingual stress.

This is done by means of mounted carborundum stones. The high offending and tripping cusps are located by means of articulating paper, also by placing the index finger lightly on the crowns of the suspected teeth, to detect any movement of the tooth or teeth in their sockets during the various excursions of the jaw, and by observing the mobility of various teeth during the different movements of the jaw as stated.

REMOVAL OF MECHANICAL IRRITANTS

Regarding the second stage, the removal of all factors which produce mechanical irritation—this of course must be done thoroughly and accurately for results. All overhanging fillings should be carefully removed and ill-fitting crowns corrected. If a small piece of tartar the size of a pin-head is left remaining on the root of a tooth under the gingiva, it will be sufficient to keep up irritation at that point, and we cannot hope for a reattachment of the tissue or the elimination of the pocket. Consequently the folly of the superficial removal of these factors, for permanent results, is evident.

TREATMENT OF THE POCKETS

Regarding the third stage, the treatment of the pocket—when pockets are deep, care must be taken to curet thoroughly all debris and necrotic and infected tissue lining the pockets. When this is completed, a sodium sulphid solution should be packed into the pocket and left for ten minutes. This is for the purpose of destroying the epithelial tissue lining the pocket and promoting the attachment of the connective tissue to the root surface. This is the only drug that I use in the whole treatment of periodontoclasia. Antiseptics and germicides have always been disappointing in this field, except as an aid in the treatment of acute gingivitis, such as Vincent's infection. For the chronic cases, which make up over 90% of the total number of cases of

periodontal diseases, antiseptics will never be more than palliatives.

Building Up of Tissue Resistance

Regarding the fourth stage of treatment, namely, the building up of tissue resistance—this may be accomplished by the proper application of the toothbrush and massage of the gums. There has been a general misconception that when the toothbrush is used on the gums, they will recede. As incorrect brushing can injure the teeth, so also can it injure the gums, but more harm has resulted from lack of brushing than from incorrect brushing. A toothbrush may be used successfully to clean the teeth and tongue and to massage the gums. However, special instructions to the patient are necessary for the correct use of the toothbrush for these purposes. Our gums get far less exercise today than is required to keep them in a healthy condition, consequently we are forced to supply this lack of exercise by the artificial means of brushing or massaging the gums to keep them normal and build up the tissue resistance to the point of health. There are several good methods of mouth-brushing as advocated by Charters, Hartzell, Stillman and McCall. Any of these methods will produce satisfactory results if done properly. Regardless of which method you recommend to your patients, be sure, first, that you are thoroughly familiar with the method you recommend, and then take sufficient time to explain and show the method to your patients in such a way that they understand it. Do not dismiss this important phase of preventive dentistry by just saying to your patient, "Brush your gums as much as you do your teeth." That doesn't tell them how, and they don't know how unless you show them.

The mouth-brushing should be supplemented by the general building up of tissue resistance in patients where systemic involvement and health indicate such treatment.

Conclusion

In closing, I wish to emphasize the importance of making as thorough an examination of the gums and supporting tissues of the teeth as you do of the teeth themselves when a patient presents for an examination. This part of the mouth examination has been woefully neglected by dentists in the past. It has seemed that their whole attention has been focused on the teeth themselves, and scarcely any attention has been paid to the condition of the gum tissues and supporting structures of the teeth. No matter how good the teeth or how good the restorations, if the supporting structures become diseased, the teeth will be lost.

There is no other part of the profession in which real preventive dentistry can be practiced to better advantage or to greater extent than in the prevention of periodontal diseases.

Pyorrhea is the most common of all diseases today and there is absolutely no excuse for it, for it is an entirely preventable disease if the factors that bring about the condition are eliminated, the disease itself recognized in the incipient stage and proper treatment instituted to bring the tissues back to a healthy condition.

Don't wait for your patient to inform you that his teeth are getting loose! As a general thing, if periodontoclasia has advanced to the stage where the patient is conscious of loosening teeth, it requires most exacting and thorough treatment to arrest the disease, and this can be done only in favorable cases at this stage, for, generally speaking, one-half or more of the process has been destroyed when the teeth have loosened sufficiently to become noticeable to the patient. If this happens today, in view of the generally known fact that pyorrhea can be arrested, and if you have failed to recognize the disease in the incipient stage when its arrest is comparatively easy, then the responsibility is yours.

[CARBON DIOXID]

Carbon dioxid may be used with any of the anesthetic gases, in sequence or in combination. This is especially advantageous in the anesthetization of children. By the use of carbon dioxid the time of induction of anesthesia may not be made shorter for a patient who takes an anesthetic easily, but if it is difficult to anesthetize the patient, induction is made much smoother and easier than it otherwise would be. It is not necessary to discontinue the administration of the anesthetic and to reinduce anesthesia, as it is sometimes if the patient holds his breath, becomes anoxemic, coughs excessively during induction, goes through a stage of excitement, is nauseated because of fear or for other reasons or attempts to vomit.

—LUNDY.

Discussion of Dr. Adolph Berger's Paper "The Changing Concept of Dentistry"*

By ALFRED OWRE, D.M.D., M.D., C.M., A.B., D.Sc. (Hon.), New York, N. Y.

Dr. Berger has stated our problem and our needs so fully that all, practically, there is left for me to say is an emphatic "Amen." Yet, since it is always a pleasure for me to speak on a subject so near to my heart, especially to a sympathetic audience, I shall say a little something, even at the risk of repeating Dr. Berger's inclusive arguments. His paper, it seems to me, is a chapter on evolution, dealing with the most rapidly evolving phase of health education. As he stated, both the medical profession and the dental profession and the more enlightened public are awake to the importance of dentistry, to its achievements and to its deficiencies. Whether we wish change or not, it is active and will be increasingly so. No inclusive welfare program today ignores the importance of dentistry; and—more significant—no such program accepts dentistry at its old face value. A search is made for the very best, for the dentistry which has the widest background of medicine and surgery. But, to steal a simile from an article by Mr. Filene on scientific medicine,** "medical science is kept constantly up to date, but the organization by which it is applied is way behind the times. That is the conclusion to which at least this particular party of the second part in the business of medicine has arrived. I am convinced that medical science travels by airplane in an age of aviation, while medical organization lumbers along in a stage-coach."

While other specialties travel by airplane, dentistry is too well content with a stage-coach. We shall have to make faster progress before long, however, for frequently of late years poor and inadequate service has aroused the citizen, the "forgotten man"; and in a democracy the "forgotten man" when aroused can make himself felt.

Dr. Berger's statement as to the importance of our specialty deserves further emphasis. It has the widest field of any. It touches more lives. It touches them directly and indirectly; and though it is often disregarded, modern biological research is showing that it has probably more to do with the general health than any other.

Dr. Berger says: "There is good reason to believe that maintaining dentistry as a distinct and separate profession is responsible for tardy progress, numerous errors, and much suffering." *No truer words have ever been spoken by a dentist.*

Custom has established certain habits of thought and action. On the part

* Dr. Berger's paper was read before the Hudson County (N. J.) Dental Society. It was published in THE DENTAL COSMOS, February, 1931. THE COSMOS declined to publish this discussion on the ground that "Dr. Owre's views on this subject were fully presented in a previous issue, THE DENTAL COSMOS, October, 1930." A. O.

** Filene, Edward A.—*Autocare versus Medical Care*, reprinted from THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, October 19, 1929, Vol. 93, pp. 1247-1249.

of physicians it has been customary to refer mouth disorders of all kinds to the dentist. They keep on doing it in spite of the fact that many dentists can give only a superficial, mechanical interpretation. In other words, the dentist is responsible for the mouth. Is it not obvious, in the light of modern scientific discovery, that he must have a wide scientific training in order to make diagnoses of such far-reaching importance and consequence to the patient? Unfortunately, under present conditions he is too often unable to meet this heavy responsibility, and instead of healing he creates pathology. Has our profession as a whole any actual right to resort to oratory in praise of its achievements? Isolated individuals have (only they do not do that); but the profession as a whole only makes a bad matter worse by such tactics. We had better pull our heads out of the sand and evolve a program that will be a credit to us and our aspirations to rank with others in the great profession of healing. Our hope for the future lies in recognizing this and meeting the situation honestly; not in politics, not in resolutions, and shouting to keep up our courage while the ship sinks.

There is a well founded university tradition to the effect that pure science must be pursued as such, and that the applied phases should be incidental. Pure science is interested first in a search for truth and the unknown and not in its immediate industrial application. This follows after, of course, but without the other it is worse than useless.

If a man as eminent as Dr. Tracy, after an efficient adjustment on his own part to the demands of modern dentistry, still feels the deficiency of his "badge of partial culture," is it not a telling commentary on the inadequacy of the old order from the dentist's standpoint? "Why," asks an awakened dental graduate of last year, "did we not take the Hippocratic oath?" Why not, indeed? This is something for the autonomists to answer.

As long as twenty-two years ago leading university dental schools organized the Dental Faculties' Association of American Universities to combat the undue commercial trend of organized dentistry. They felt keenly that a real university interpretation of dentistry was absolutely necessary. This led resistlessly to a logical effort to place dentistry back on its old footing as a specialty in medicine. Dean Winternitz of Yale University Medical School says:

"We have lived nearly a hundred years in the most perfect example of an absurd condition that could possibly be conceived of, namely, that dentistry should be an entity separated from medicine. It is inconceivable. . . .

"A great deal has been written about it, and everybody, I believe, who hasn't a vested interest in the matter will realize that it is not a situation that will continue very long. But how is it going to be cured? That is the question. Not by beautiful speeches, not by hypothesis, but by facing facts. There are no dentists today who are prepared to cooperate with medicine in the way that is essential, and there are no medical men today prepared to cooperate with dentistry in the way that is essential. You can't change this situation overnight, no matter how much money you have. Time is required; the vested

interest of the group, the educational policies need time for adjustments. We have to train a group of men in the first instance who will stand on an equal footing with the physician, who will have the respect of the surgeon or the eye doctor or the foot doctor or the kidney doctor or any of the other kinds that you can recognize as you walk through the hospital by the instruments that stick out of the back pocket. This new group must know dentistry and must know medicine. You hear a great deal of talk about the first two years of dental education being the same as medical education. That may be so, but I don't believe it.

"The medical student and the dental student are not admitted on equal terms into any college that I know anything about, and until they are, until they are selected on the same basis, until the dentist gets the same opportunity educationally that the medical student does, you are going to have this split. If you can admit them on the same basis and you can adapt a curriculum in some way so that a man doesn't have to know all there is to know about everything that is taught in every subject and you can salvage enough time so that the student will have two-thirds of his opportunity for elective work, it is quite conceivable that he might learn something about the teeth just as he learns about other parts of the body.

"But he can't learn anything about the teeth until the best medical schools develop focal centers of research in each one of their fundamental departments which have as their primary objective the rôle of the teeth in the economy of the organism.

"In other words, it can't be a side issue for the junior man to do, but some man particularly adapted, particularly interested, must be given the problem in bacteriology of the relation of the teeth to systemic infection and the relation of systemic infection to the teeth.

"And so on, with all of the other subjects.

"Then, when you get to the clinic, men who know dentistry and know medicine will have to act as specialists from the standpoint of the teeth just as others act as specialists from the standpoint of other parts of the body.

"I know what is going to be said right away. Yes, but these fellows, after they get into this elite group of medical men, after they are super-dentists, so to speak, and have gotten an M.D. degree, don't practice dentistry. Well, I don't believe that this need be true. The reason I don't believe it is because dentistry has taken the forward step already in not making it necessary for the dentist to do everything that a dentist of fifty years ago did. And medicine is following in the wake.

"Different levels of education are being recognized. It isn't necessary at all for a man to have studied medicine in order to be one kind of a surgeon. That was proved in Russia a few weeks ago when a cobbler was arrested for having performed 600 operations successfully, without a medical degree. You may have read that in the newspapers. In other words, it depends upon your definition of surgery. But a real surgeon must be, in the first instance a doctor, not an operator. In the second instance he might be a therapeutic

specialist, but he doesn't make his gauze sponges, he doesn't give his anesthesias, he doesn't make the casts and braces and other things that are necessary in his work. He doesn't even make the clamps with which he clamps off blood-vessels, because those things have been relegated to people who can do them without being taught surgery or medicine plus the therapeutic procedure of surgery. In medicine we have anesthetists and heliotherapeutists and physiotherapeutists and bracemakers and a whole lot of other people who have come in because of the economic need of providing for the skillful medical man the wherewithal to carry out his work expeditiously.

"And the dentist has done it even more. I asked some dentists not very long ago how many men a competent dentist could supervise, and the answer was, 'Oh, twenty, with the greatest ease.' And the people that he can supervise might be technicians. Of course, the question is whether you can get technicians. Will anybody be a technician, or will everybody have to be a superman?

"It all depends upon the point of view. We place a premium on artificial values today. It isn't how well a man does his job that counts economically. It is what his job is, and we are able to inflate the value of jobs by our unionism, by creating artificial nomenclatures, which make it difficult for anybody else to understand what we are doing. In that way we build stone walls around our particular subjects, which brook no interference.

"The premium shouldn't be on the job. It should be on how well that job is done. If we could do that and create a natural division on quality, it would be much easier to attract the proper type of personnel into what we consider to be menial, but which are absolutely essential occupations today in our social organization.

"At New Haven we are trying an experiment. We have established at the present time four focal centers of research involving the structure of the teeth, the nutrition and function of the teeth, the infectious processes involving the teeth, and a clinical focal group that is interested in trying to ascertain the relation of the teeth to the rest of the organism."*

You will recall that the Rockefeller Foundation recently granted the Yale University Medical School $25,000 annually for five years for research into the problems of dental disease. And what does organized dentistry do to meet this situation? It passes resolutions to preserve the status quo. The few crusaders are having an uphill fight. Yet with something of the crusader's faith they go on, confident that right will prevail. We shall ultimately make good our claim to rank as a profession and not a trade. Any failure to meet our responsibility by the only ethical road—that is, by adequate scientific training for the problems of disease—is indeed a "social crime." When dentistry gets on such a basis and approaches its problems through medicine, it will gain the financial support so badly needed. But

* Extract from an address made by Dean M. C. Winternitz of Yale University School of Medicine at a meeting of representatives of university dental schools and others vitally interested in dental education held at Columbia University, November 9, 1929.

it has first to show a change of heart. We must evolve a program whereby all the people can in time be given scientific dental service and keep such a plan on a practicable economic basis. The universities should be left as free as possible to experiment for the benefit of humanity. I believe they can find the way out.

630 West 168th Street

Henry J. Prentiss, A.B., M.D.

As we go to press, an Associated Press dispatch announces the death on May 17th of Dr. Henry J. Prentiss, head of the Department of Anatomy in the University of Iowa, from heart disease. He was sixty-three years old.

Dr. Prentiss will be remembered by the older members of the National Society of Denture Prosthetists for his invaluable presentations on the anatomy of the temporomandibular joint.

Dr. Prentiss was a great anatomist whose fame would have been broadcast to the scientific world but for his retiring, self-effacing nature. He was one of nature's noblemen to all who were fortunate enough to be admitted to his intimate circle of friends, and all such will mark his passing with sincere regret.—L. W. D.

Dentistry Today

By ARTHUR G. SMITH, D.M.D., Peoria, Ill.

What is the matter with Dentistry today? Chiefly two things! It is largely oversold to the Public, but also largely undelivered by the Dentist! These statements, of course, need elaborating.

An unbelievably varied and colorful series of Events has built up, during the last few years, a "Tooth-Consciousness" on the part of the General Public which has now reached a development far beyond anything of the sort ever before experienced in the History of Mankind.

Started perhaps by the spectacular death of Ex-President Roosevelt, which was rightly or wrongly attributed to an infected tooth; augmented by the World War rejection statistics of this and other Countries, pushed forward by the "Health Education Programs" of various Life Insurance Companies, taught in an ever increasing number of Public Schools to millions of highly impressionable Children, featured in impressive full-page advertisements of Toothpastes, Mouthwashes, etc., and finally presented nightly to the Citizenship of the Nation as Prelude and Postlude of The Great American Episode of Amos an' Andy, the importance of sound and beautiful teeth —conditioned in a clean and healthy mouth—has gripped the minds and imaginations of Mr. and Mrs. Average Citizen with an intensity undreamed of a few years ago.

Today the Great American People want GOOD Teeth, good-looking teeth, teeth which appear sound and attractive when they speak or smile, teeth which are comfortable and usable, teeth which can be kept clean, teeth which do not taste like the bottom of a bird-cage after a few weeks of use, teeth whose chief by-product is not measured by the Innocent Bystander in terms of Halitosis!

Because of these wants the Great American People are walking into offices where it says D-E-N-T-I-S-T on the door of the Reception Room and asking to have their teeth made over to conform to their desires, willing to pay for such a Service any sum at all within their means.

What is being delivered to them by the Dental Profession as an answer to their demands? As a Fulfilment of their Dental Dreams? Chiefly, GOSH AWFUL TOOTH-PATCHING and Assorted Dentistry so terrible in quality that if done by a Student in any Class-A Dental School in the United States, it would be refused the O. K. of the Demonstrator!

At the present time almost everything connected with Dentistry is done well except that part—often a very small part—which is the actual product of the Hand and Brain of the Dentist Himself! Witness these Facts: Artificial Teeth are marvels of Naturalness; the shades, moulds, etc., are wellnigh perfect in appearance; instruments and operating equipment are in most cases beyond praise; almost every

Dental Laboratory in the Country is turning out work of an extremely high standard of excellence—it MUST do this or the Dentist would put it out of existence by the very simple method of sending such work elsewhere for execution. THE DENTIST KNOWS WHAT GOOD "LAB" WORK IS and insists on having it! The PATIENT KNOWS ALMOST NOTHING OF WHAT GOOD DENTISTRY IS, and so he goes on blindly, buying and paying and keeping numberless "Dentists" in comfort or luxury who could not stay in business six months if their Patients knew as much about the actual possibilities of Modern Scientific Tooth Restoration and Mouth Rehabilitation as the Dentist knows about Modern Laboratory Work and properly tempered instruments!

Such is the situation in Dentistry Today!

Some of the things which have brought this state of affairs about and what should be done to correct it will be considered, briefly and to the point, in the Articles of this series.

534 Jefferson Building

What Attitude for the Recent Graduate?

By C. A. STURDEVANT, D.D.S., Meadville, Pa.

During my many leisure hours in the past few months I have read with great interest the various explanations that have been expounded in current dental literature on why various members of our profession have succeeded and others have failed. But more especially have I been interested in why certain groups have continued to prosper while others have entered a state of professional and economic "doldrums" during the present financial depression. I have tried to examine the various members of the profession with whom I have been intimately associated and classify into groups those who possess the same attitudes toward the profession. I should like to outline these various groups and comment on their characteristics in the hope that those about to enter upon their life's work as dentists may more intelligently choose with which group they wish to become associated.

THE "FADDISTS"

First, there is the group of dentists for whom dentistry has never ceased to be a glorious thrill. They welcome every new instrument and medicament as a possible panacea for their difficulties in the past. They enthusiastically apply each new policy of treatment for every known malady. In this group we find the "faddists," who plunge wholeheartedly into every new cult and theory. Most of those in this group have no idea of the extent of their investment or operating expenses; furthermore, most of them care less. Their office is a laboratory or clinic in which to try the modern theories, the logical as well as the illogical. They have no economic budget or goal except that some way will be provided to enable them to purchase, regardless of the integrity of the author, every textbook or piece of equipment that is brought on the market. Their office is usually a museum embracing in material and dust-collecting form all the new ideas that have been presented to the profession since their graduation. These individuals are targets for the advertisers and "high-pressure" salesmen, while they themselves rush on through life as a "jack of all trades and master of none." They find comfort in the thought that they are not "old-timers" or "has-beens," but are to be the first to enter that glorious place where the rainbow ends and get the reward that myth attaches thereto.

Members of this group live to practice dentistry, contrasted with others who practice dentistry to live. They constantly and everlastingly talk "shop" and make themselves unpopular at all dental meetings by conscientiously interrupting every speaker and clinician in their apparent effort to keep at least one step in advance of the rest of the audience. In the accumulation of a pittance for old age they have little interest, and their enthusiasm in the realm

of their profession sometimes extends into other fields of which they have little knowledge, hence their frequent participation in various "get-rich-quick" schemes, which usually end in grief to the participants. Old age frequently finds them broken in body and health and quite unprepared for the inevitable "rainy day."

The "Mass-Production Advocates"

Next comes a very large group—perhaps the largest of all—namely, the "mass-production advocates." This group is composed of two classes. The first class consists of those who entered upon their careers with the flags of idealism held high and set on aspiring to the best of their profession, only to have their hopes shattered and their ideals crushed by the cruel economic competition which the recent graduate encounters after he graduates. They grope blindly in their bewilderment, looking for a possible way out of their predicament, and at last adopt the policy, because of financial necessity, of worshipping at the same altars that have attracted the great captains of industry. The bewildered young dentist remembers that for years the tallest building in the world was built from nickels and dimes, so he too aspires to build a creditable practice on small fees, a minimum of profit to himself, a maximum of hours of painstaking toil and satisfaction to his patients. He builds his practice by doing the best work capable at a fee appreciably lower than those of his long-established professional fellows. This continues until his office hours are all taken and then he attempts to follow one of two paths. His fees may be raised to such a point as to eliminate the least desirable of his patients, making his hours at work in the office as productive as possible. This is a very common practice, one that has laid the foundation of some of our very best professional careers, and is to be highly commended.

The other path that the young dentist may follow is to continue his efforts to simulate the modern methods of our leading industrialists. If such a course is followed, it soon becomes evident that the industrialist has succeeded by increasing his production, the quality of his product being at least constant. This is accomplished by the installation of more high-powered machines and labor-saving devices to the end that the amount of production is dependent upon the power driving the producing machines, this power, in turn, being dependent on available capital and the amount of investment.

This is not true in dentistry except to a certain point. The dentist in the past—until very recently, in fact—has derived his income from the fee collected for a personally manufactured product. The sale of knowledge and skill, as in the legal and medical professions, has been a very recent addition to our profession and is difficult of appreciation by the patients, who regard the dentist as a pure artisan. The dentist, with practice, is able to increase the number of salable articles manufactured in his office up to a certain point, where "short cuts" enter in, from which point almost always the quality of workmanship diminishes as the production rate increases. In the

effort to accommodate all comers and meet the debts that have befallen him from the domestic encumbrances which the young dentist usually regards as becoming to his position in society he commercializes the inability of his patient to compare and contrast adequately or to appreciate his work fully, with the result that his income is from the volume of business transacted. The end-result of this tendency is the unethical members of our profession who "get away with all they can and still keep 'em coming."

The other members of this group in our profession began at once to follow the above-described path. In dental college they were satisfied with a bare passing grade. They passed their college examinations and those of the state board examiners by memorizing the answers to the questions that had been asked in the past few years. They were clever in that they succeeded in getting out of their difficulties rather than aspiring to that nobler concept of knowing the condition, its cause, effect and proper treatment. In short, they aspired for cleverness in place of true greatness.

Volumes might be written describing the attitudes of those practicing from this viewpoint. In this group are the purely mercenary members of our profession. They are seldom the fitful "faddists" of the preceding group; rather they are in "ruts" and continue through life with the methods that first gave them success. As long as the old way works, why take the trouble to learn a different one? These men often know with amazing detail their investment and operating expenses and the necessary income to reach a certain goal, which, when attained, is extended to ever widening horizons of wealth and accomplishments.

I feel that I know this group quite well. It was from funds derived from this type of dentistry that my education was made possible. Well do I recall seeing, on more than one occasion, over thirty dentures in the process of manufacture on my benefactor's work-bench in his office in a town of less than a thousand inhabitants with another actively practicing dentist in town. This is as near "mass production" in dentistry as I can imagine. Late on Saturday night, when the week's work was done, my benefactor was satisfied that he was as much ahead of his "competitors," whose fees were higher, in proportion as his amount of hard work was greater than theirs. Needless to say, his patients never received any more than the low fees would indicate—perhaps less.

Men in this group are affected the least of any group of dentists during economic disorders of the country. Patients are attracted to them by the feeling that they are getting a "bargain," in that the fees are lower than elsewhere. At a dental meeting, when others complain of economic depressions, they are prone to protrude their chest and say: "Look at me! I've succeeded because I charge less than you fellows." This is, in a measure, true. However, if the fees of all were equalized, I rather think that our "mass-production advocates" would seriously suffer. The outstanding inducement to their large practice would then be gone, namely, lower fees than those of

their professional associates. Fees being constant, his more scholarly brothers would render a better service, hence it is to me highly probable that low fees is the greatest inducement to the "mass-production advocate."

This sort of dentist looks primarily for those unfortunates who have reached the point where numerous extractions and complex replacements are in order—"professional scavengers," if you please. Prosthesis on a grand and glorious scale is their "bread and butter." These dentists usually enjoy a very satisfactory fee for their labor, which the patient gladly pays because he leaves with something materially more, or materially less, than when he came. They retail silver fillings at a higher fee than cement fillings, because silver costs more—dentistry by the pound. The more recent and less profitable phase of our profession, namely, prevention of the troubles that bring coin to the mass-production advocate's pocket, is ignored. Health talks or conversation intended to raise the appreciation of the service being rendered are replaced by an interesting or amusing incident associated with the patient's favorite diversion. Children's dentistry is avoided as much as a case of smallpox, hence the beginning of another candidate for a "big job" in the future. The work is rapid, consequently an inducement for the busy business man; often painless, regardless of quality — a second inducement; cheap compared with the fees of other dentists — a universally appreciated appeal.

The "Angelic" Group

Then, thirdly, there is that very small group of dentists seldom encountered who, from the nature of their attitude, may be referred to as "angelic." This group is composed of those who think little of themselves compared with their concern for their patients. They rejoice, when walking slowly up the street to a very modest home after a long hard day's work, to see their patients returning from an invigorating game of golf after a shorter and more remunerative day's work than their more highly educated dentist. These dentists appear elated with any sign of prosperity on the part of their patients, for they feel that their contentment with a small fee has made that prosperous manifestation possible. They regard their position as a divinely appointed rank necessitating years of expensive preparation in order to be eligible to render this service to their fellow man, with the glorious end in view of making personal use of the taxes they have spent for the support of charitable institutions for the aged. They oppose every attempt at bettering their own condition by elevating the fees of the dental society to which they belong, considering only the patients, who might be offended if they received more than laborer's wages. What these dentists lack in financial and concrete recompense for an indispensable service well done they say they make up in "good will" and the knowledge that a much more laudable position awaits them when the final rewards are distributed beyond the "pearly gates."

The Idealists

Then, lastly, there is that group of dentists whose actions gain for them

the admiration of the university that trained them and the good-natured best wishes of their fellow practitioners as they tread the tortuous and stony road of professional idealism. They consistently read the best current dental literature in the effort to render their patients the best possible service not only now but consistently as evolution takes place in our profession. They endeavor to educate their patients as to the value of the service being rendered. They record in large numbers on the record of their day's work the time spent in "consultation" so that the health of their patients' mouths may be better than those uninstructed patients of their professional brothers, and so that the next generation may enter the world better fitted for life's work than the present generation. Attempts to get paid for this most valuable service often meet with discouraging results, so that red figures replace the blue on the ledger for the time spent. These men know the value of their services, and they seek to get a just return for them and no more. Included in this group are those men who can afford to take the time to experiment and research so that this world may be a better place in which to live.

This last group reminds me of a small group of workmen I saw, while passing a building in the course of construction, expending every possible effort to raise a large piece of equipment to the top floor. So it is with this small group of men in our profession who toil tirelessly on, regardless of discouragement and rebuff, applying their very lives to the block and tackle of education so that the level of the members of our profession may live on a higher plane than their ungrateful brothers have lived in the past, and so that a better service may be rendered to their patients and to mankind throughout the world.

21-22 Masonic Building

Don't Let Your Teeth Spoil Your Face!*

By JAMES P. RUYL, D.D.S., New York, N. Y.

Good looks are very important to women because they help to attain the desirable social position for which most of them strive. The knowledge that she appears well helps any woman to hold a poise which is impossible to one who knows that her appearance is not pleasing. Good looks help women who need employment to get positions which are not open to women of unpleasing appearance. And when women are being selected for promotion or favors, the good-looking woman is sure to be chosen, other matters being anywhere nearly equal.

While the kind of good looks which are an asset to a woman in the ways that have been mentioned might be a sign of effeminacy in a man and therefore a handicap to him, a pleasing facial appearance is of much greater importance to a business man than most of us take the time to appreciate, and we frequently allow what might be a valuable asset to be impaired or destroyed through ignorance and neglect. It is the purpose of this talk to show why and how it should be conserved.

A pleasing masculine appearance is of somewhat the same value to the young man about to start in business as a pleasing feminine appearance is to the young woman; it makes employers prefer him to the young man of unattractive appearance. The confidence which the knowledge of good appearance gives strengthens the young man's stride toward opportunity and advancement.

Most of us are salesmen of ideas or service or materials. We have to persuade customers or superiors or boards of directors or the bank or clients or patients to do something we desire or advise. Frequently the decision of even a bank rests as much on its estimate of the character of the proposer as it does on the proposition. In that estimate a facial appearance which expresses a sound character and is pleasing often forms a greater part than might be thought.

When a salesman not well known tries to sell us something, do we immediately concentrate our attention on the propositions to the exclusion of the man? Rarely. Consciously or unconsciously we first form an opinion of him; if it is too unfavorable, the proposition gets slight attention. In other words, he must sell us himself before he can sell us his wares. Other people view us in much the same way.

We look at the face so intently in forming our estimate of people because it and the hands are the only parts of the person which, during business hours, unfailingly reveal the person. The tailor and the shoemaker can almost make a silk purse out of a sow's ear, but not quite while the hands and face remain. If the face shows

* Delivered before two Luncheon Clubs on the occasion of the meeting of the Michigan State Dental Association, Detroit, May 5-6, 1930. We are pleased to place this talk at the disposal of dentists who may desire to speak on similar occasions before Rotary, Kiwanis, Lions, etc.

good character and is reasonably pleasing, it dwarfs into comparative insignificance almost any bodily defects which accident or illness may have inflicted on the man.

It is of the utmost importance to any business man who is not willing to be put on the shelf as superannuated that the face should be protected through middle life from the changes which are inseparable from old age, but which should not be allowed to become dominant before at least seventy years have passed. When these changes occur in middle life, they are usually signs of premature debility, and they may easily lead observers to think: "This man's bolt has been shot. He is not desirable as an employee, or, if employed, he is no longer capable of big things." And for that man that decision closes the doors of opportunity.

The two features which dominate the appearance of the face are the eyes and the mouth. In our little talk today we shall confine our attention to the influence of the mouth on the appearance.

The appearance of the mouth, either open or closed, depends to a great degree on the positions of the teeth. If those positions are good, the expression of the lips when the mouth is closed will be pleasing, and when the mouth is opened the teeth, if fairly well kept, will light up the whole face.

If the positions of the teeth are not good, they may cause the mouth to look weak or old or mean, even when the lips are closed, and when the lips are opened they may, in extreme cases, make the mouth so repulsive that it becomes an insurmountable barrier to success.

The back teeth influence the positions of the front teeth to a degree which should be much better understood than it is. In this respect they are like your golf swings: if your back swing is correct, your forward swing is likely to be good; if your back swing is wrong, your forward swing is not likely to be right. If the back teeth are missing, not only do the cheeks fall in and the eyes look tired and sleepy and the face become prematurely old, but the pressure of chewing is brought on to the front teeth and they are likely to be forced into displeasing or repulsive positions. In such cases the lips are not pleasing when closed, and, when they are opened, in any form of social or business contact the only feature the beholder is aware of is the teeth. And they prompt the desire only to get away to some one whose appearance is more pleasing.

There are other cases (fortunately few in proportion to the total number of people) in which the natural positions of the teeth make the mouth displeasing when open or when closed. The gums may be unusually long or prominent or the lip may be short so that the mouth cannot be closed in such a way as to hide the teeth. In other cases the teeth have decayed to such an extent that repair is no longer possible. In such cases pleasing revolutions in the appearance have been effected by removing all of the natural teeth and a part of the gum, when it was too prominent, and supplying full sets of artificial teeth.

The story of one such case may be

interesting. A girl of pleasing appearance secured, at the age of about twenty-two, a position as stenographer to one of the young men in a business house. During the next ten years he rose to be an important executive, and she, by intelligence and industry, rose with him. Long before the story opens, she had become his secretary, with duties which included meeting important people and sometimes acting in his stead. She was highly valued and very well paid.

During the ten years some unknown cause forced the upper front teeth and gums forward until her mouth became repulsive. Highly as her services were valued, the day was in sight when no person with such a mouth could act in so important a capacity, and for a person with such a mouth no other similar opportunity could ever open.

All of her teeth were removed and full upper and lower dentures were put in their place. The immediate improvement in appearance was great, and as she became accustomed to the plates, it increased. Most of the people with whom she came into contact never knew that her teeth were artificial, and she has gone on to increasing success and rewards in business, to the great satisfaction of her employer and herself. Many cases can be helped in a similar manner.

Restorations which become such important factors for achievement and success in the lives of people who have yet much to do in the world are made possible only by the great increase in professional knowledge and skill among dentists in recent years and by improvements in the form and colors of artificial teeth. A few words about these improvements and their value to the person who needs teeth may be interesting.

You probably have never been told that the form of each of the large teeth in the front of your upper jaw is either closely like or exactly like the form of your face, only of course the tooth form is upside down as compared with the face form. Whether your face is long or short, rectangular or tapering or round, these teeth in the center of the upper jaw must be of the same form, if you ever need artificial dentures and they are to be as pleasing as they should be. When the artificial teeth are not of the same form as the face, there is always a disharmony, which mars the effect, even if one does not know just what the trouble is.

Whenever it becomes desirable to have the natural teeth replaced with artificial teeth to secure a more pleasing appearance of the mouth, the person should visit the dentist who is to make the plates before the natural teeth are extracted. The dentist will then be able to make records of the colors and forms of the teeth. He will take an impression and, after the teeth are extracted, place them in it and pour a cast in plaster, which will give information of great value in his work. He will then be able to give the artificial teeth little characteristics of form and position which may make the teeth much more like those that were removed, so that many people may not know that the teeth are false. This has been done so skillfully in some cases that husbands do not yet know that their wives have false teeth.

When the gum is so prominent as to force the teeth into repulsive positions, some of it should be removed under the direction of the dentist who is to make the plates. The bone of the gum is a very thin bone, which is put there merely to hold the teeth, and it is absorbed after the teeth are extracted. When the surgeon takes away some of this bone, he is merely doing quickly what nature would do slowly, so as to permit the dentist to set the teeth promptly in pleasing position rather than wait several years. The removal is a very minor operation and need cause no apprehension.

Experience shows that when a person has had some noticeable irregularity of the teeth for a long time, so that friends and others become accustomed to it and, so to speak, know him by it, it is not wise for the dentist to set the teeth in the first set of plates back to the nearly ideal position which the natural teeth may have occupied years before. The change would be too great; it attracts attention and frequently unfavorable comment. The change back to normal should be made gradually by means of two or three sets of dentures, perhaps a year apart.

In cases where it is impracticable for the patient to go without any teeth for a couple of weeks artificial dentures may be inserted as soon as the soreness is gone from the mouth. In fact, in some offices they have been inserted before the patient left the chair following the extraction.

Following the extraction of the teeth, the mouth will continue to change form throughout life, very rapidly at first, then less rapidly, then slowly. When the change has progressed enough, the dentures will become loose and must be either rebased or remade. This is to be expected and need cause no surprise. People who are given a pleasing facial expression by artificial teeth and are given this kind of service consider the benefits well worth whatever they may cost.

Professional knowledge and skill, as applied to denture-making, have increased greatly in the last few years, so that dentures can be made to stay in place, be comfortable and be fairly efficient in mastication, sometimes very efficient. They are not equal to fine natural teeth in pleasing positions supported by sound gums, but they are immensely superior to decayed or deformed or repulsive natural teeth.

Don't let your teeth spoil your face! Keep your natural teeth healthy and sound and pleasing if you can. If you cannot do that, you need not hesitate to have them replaced with artificial teeth of the right form and size and color and of a gradually improving arrangement, until people who are not "in the know" occasionally say to you, "What beautiful teeth you have! How do you keep them so well?" To which you may reply, if you wish, as Bill Nye used to many years ago by saying, "By placing them in a glass of water each night when I retire."

Preventive Dentistry is a Growing Practice

Following is the first report on questionnaires sent to dentists by the New York Tuberculosis and Health Association in February, 1931, relative to dentistry for children

Dentistry for children is a subject of real concern to 36% of New York's dentists, judging from the questionnaires returned to the New York Tuberculosis and Health Association since their mailing six weeks ago.

The Dentistry for Children Campaign, inaugurated by a questionnaire in February to the 7,000 dentists of Greater New York, is being carried on by the Committee on Community Dental Service of the New York Tuberculosis and Health Association in cooperation with the First and Second District Dental Societies, the Oral Hygiene Committee, the Allied Dental Council and the New York Academy of Dentistry.

We had intended to write a progress report a month ago, but 2,413 answered questionnaires literally snowed us under. The comments indicate active thinking on the subject of the child patient and required careful tabulation so that no contribution to this important problem should be lost.

At the present writing we can speak for more than a third of the profession. The silent 64%, we hope, will answer soon, so that we can present a complete picture of the trend of preventive dentistry in the City of New York.

Of dentists who have answered our questionnaire 93% are general practitioners, and 38% of those practicing a specialty are engaged in orthodontia or pedodontia. Only 2% of the 2,413 dentists answering do not treat children, and a number of these are specialists whose specialty precludes children's needs.

Complaints Against the Attitude of Parents

Complaint against parent attitudes is voiced often enough to name them a major obstacle in the practice of preventive dentistry. Thirteen per cent of the dentists indicated that parents are unwilling to pay a just fee for the treatment of children's teeth, and only 2% said that it is not difficult to collect a just fee for this service. Among the 85% silent on this point there are many comments which blame the parents' ignorance for the neglect of children's teeth, some parents refusing to let the dentist do this important work with or without consideration of fee.

Thus the case of the parent versus the dentist looks black for the parent. Of course, this information is drawn from little more than a third of the local profession and might be counterbalanced by the opinions of the outstanding two-thirds. And a very few dentists speaking against the importance of dentistry for children, with the authority which their profession carries, can influence directly and indirectly a large number of parents.

The Dentists' Attitude

Only 1% of the dentists admitted disliking to work for children, while 6% expressed themselves as liking, even preferring, child patients. One per cent of those who do not treat children do not refer them elsewhere for service. This is unfortunate, since the child applicant who is neither treated nor referred is the source of the parents' complaint that "dentists refuse to treat children's teeth, saying that baby teeth do not matter."

A Neighborhood Dental-Health Demonstration

A neighborhood dental-health demonstration to urge the regular care of the teeth is greeted with enthusiasm by 87% of the dentists. Five per cent would not like such a demonstration either because they practice in a business district or because they have interpreted the demonstration to mean a heavy burden of volunteer service and further development of clinics.

The Question of a List of Dentists for Children

Suggestions as to a basis for a list of dentists prepared to practice dentistry for children, offered by 45% of the dentists, fell in thirteen classifications, which could ultimately be reduced to willingness to work for children, cooperation with local dental societies, and special training and supervision. Five per cent of the dentists were opposed to any list, giving as their reasons professional ethics and the dangers of exploitation.

Conclusions

This is just a brief story of the interesting facts revealed by the questionnaire. The answers have been sufficiently indicative to use as a basis in planning a year's program in which we hope to promote dentistry for children. We intend to keep in constant touch with the cooperating dentists, guiding our dental-health education for the public by the information and ideals of the profession.

With a measure of the dental service for children available in private offices, it will be our object to extend the demand for this service on the part of the public. Treatment clinics should be confined to those unable to pay the fees necessary in private practice, and parents should be so impressed with the importance of dentistry for children that they will look upon a just fee for this service with at least the same degree of grace with which they accept their own dental costs. When parents realize that the care of children's teeth is more important than that of adult teeth, then preventive dentistry will have arrived and the need for adult dentistry, largely reparative, will decrease in the ensuing generation. It is our aim to persuade parent and dentist that preventive dentistry is a growing practice, and that both parent and dentist share the responsibility for the health of children's teeth.

CORRESPONDENCE

New York, N. Y.

Editor, THE DENTAL DIGEST:

I am sending you some interesting data for publication:

Registration in public and parochial schools (City of New York) for 1931 ..... 1,065,000 (approx.)

Number of schools, by boroughs:

Manhattan	249
Bronx	160
Brooklyn	326
Queens	189
Richmond	63
	987

From our findings (over a period of years) it takes a hygienist about forty minutes for prophylaxis and instruction, and a dentist about four hours to complete any one case.

Allowing forty minutes per child, to care for 1,065,000 children in the school system it would take 355 hygienists, employed on full time (allowing 2,000 hours as the service time for a year for these employees), to cleanse the teeth of these children once a year or 710 dental hygienists to serve the same number of children twice per annum. At a salary of $1,500 a year it would cost $1,065,000 a year for the latter service. It is interesting to note that this is only $1.00 per child per annum. To this it would be necessary to add $71,000 for instruments and supplies, making a grand total of $1,136,000. (It has been estimated that instruments and supplies for one year for a hygienist cost: instruments $25.00, supplies $75.00.)

Allowing four hours per child, to care for 1,065,000 children it would take 2,840 dentists, allowing 1,500 hours as a year's service for one dentist. Considering the type of service and the available hours for children's work, I would suggest that dentists be employed on part-time basis, hours to be 9 to 12 a. m. and 1.30 to 4.30 p. m. These hours would give the child and the dentist the advantage of daylight for dental operations three-quarters of the year. Part-time service would call for the employment of 5,680 dentists, at a suggested salary of $1,500 per annum for three hours' service per day, a total of $8,520,000 for personnel.

There are in Greater New York about 6,000 dentists. It is proposed to use these dentists' own offices, thereby cutting down expenses for overhead, equipment, and using available hours of the dentists profitably. It is estimated that $750,000 would cover the cost of supplies for these operators for one year, making a grand total for dental service of $9,270,000.

It is estimated that supervision of the dental and hygienists' staffs would cost $600,000, allowing one supervisor for each twenty of the 6,390 employees.

On the basis of the foregoing figures the total estimated cost of the service under consideration would be:

$ 600,000	For supervision
9,270,000	For dental service
1,136,000	For dental hygienist service
$11,006,000	Grand total

It is assumed that 33 1/3% is the general average of children whose parents can afford to pay for care of dental defects, therefore two-thirds of the grand total above would be needed to care for all children in Greater New York:

$ 7,337,333.33	Needed for service
3,668,666.67	Supplied by parents of children able to pay
$11,006,000.00	Grand total

To all of these figures must be added the cost of clerical help, office staff and office.

The second year of operation, only one-fourth of $7,337,333.33 would be needed to continue the work and take care of the new cases that come into the kindergarten classes. We would then have no emergencies, no extractions due to caries, and a good healthy foundation.

HARRY STRUSSER, D.D.S.,
Chief, Division of Dental Service.

Mottled Enamel

A research on *Mottled Enamel* by the Nutrition Department of the University of Arizona, with Dr. Cammack Smith in charge, is under way. The University will greatly appreciate it if any members of the dental profession having extracted teeth of this type will send them to

ALEX BARD, D.D.S., *Chairman,*
Consolidated Bank Bldg.,
Tucson, Arizona.

DIGESTS

POLYCYSTIC ADAMANTINE EPITHELIOMA

By J. Orton Goodsell, Jr., D.D.S.

Adamantinomas arise from epithelial rests or paradental debris. Certain cells of the enamel organ develop erratically and later form these new growths. They are of a malignant nature, but never metastasize and, if completely removed, will not recur.

In late cases a complete dissection is necessary, but in the earlier cases the malignant tissue may be completely removed with the cautery with no resulting mutilation nor loss of function.

Roentgenograms of the whole mandible are necessary, and in all the cases that have come under the observance of the author there have been present unerupted, impacted third molars. The suggestion is made that there may be an etiologic connection.—*The International Journal of Orthodontia, Oral Surgery and Radiography,* March, 1931.

RADIODONTIA IN OPERATIVE DENTISTRY

By Howard R. Raper, D.D.S., F.A.C.D.

The interproximal roentgen-ray examination has had a marked influence on operative dentistry. A common mistake is to regard normal cervical radiolucency as caries, but the differentiation is not difficult.

The real extent of the cavity is greater as a rule than would appear from an examination of the film, and while all proximal cavities are not shown in the roentgenograms, yet a great many are discovered by this method that would escape detection by the ordinary methods of examination.

Radiographic studies of proximal caries show that their progress is relatively slow, and that roentgen-ray examinations are necessary only from one to two years. The only solution to the infected-pulp problem is to find the cavities when they are small, and interproximal examinations may be used periodically to check pyorrhea in its incipiency. Scaling may be checked radiodontically.—*The Journal of the American Dental Association,* April, 1931.

INVOLVEMENT OF THE NERVOUS SYSTEM FOLLOWING EXTRACTION OF TEETH

A woman, 66 years of age and reported to have been in good health, had six teeth extracted. A week later six more were extracted and several days later the last seven were removed.

On the day of the last operation she had difficulty in speaking and moving the jaw. Two days later she became speechless and there was difficulty in swallowing. This condition has persisted for over a year.

The mind is not affected in any way, but there is severe pain on both sides of the face and also headache. She can pucker her lips and protrude the tongue slightly but not beyond the lips, and it shows marked atrophy along the edges. Fibrillary tremors are present. The soft palate is imperfectly innervated. Movement of the eyelids is normal, but the contractions of the masseter muscles are feeble. She cannot speak and swallowing is difficult. This is believed to be the only case of bulbar palsy following the extraction of teeth.—*The Journal of the American Medical Association,* April 4, 1931.

PREVENTIVE PERIODONTIA

By BENJAMIN TISHLER, D.M.D.

In the majority of cases the etiology of Vincent's infection is purely local, though systemic symptoms may develop in many instances. Consequently the treatment should be considered from this viewpoint.

The difference between health and disease is a question of resistance, and infection of the gingival cells will result only when the normal protoplasmic tone is sufficiently lowered.

The use of medicaments alone is sometimes insufficient to check Vincent's infection because, although the bacterial activity may be checked, the cells are still exposed to recurrent attacks.

While it is generally admitted that excessive smoking is a factor in the lowering of resistance, yet the statement that the resistance of the gingival cells of women is poorer than that of men cannot be proved. The variation in resistance is present as between individuals, but not as between the sexes.

One of the most important causes in the failure to control Vincent's infection is the presence of unsuspected pockets, and in many cases the tissues heal immediately after these foci have been treated. This is especially true in young patients.—*The Dental Cosmos,* April, 1931.

Foreign Dental Literature

Edited by JOHN JACOB POSNER, LL.B., D.D.S., New York, N. Y.

DIATHERMY IN DENTISTRY

By DR. H. J. MAMLOCK, Berlin, Germany

It is astonishing to see how long it has taken in mouth hygiene to recognize that the inorganic-chemical principles must give way to biological-physical ones. The same proceeding is taking place, if rather stormily, in the field of root-canal work. The desire to sterilize the infected root canal through chemical means was the ambition of all workers in this field. For this purpose no drug nor combination of drugs was overlooked. Surgical intervention was the ultimate treatment. And now what a change! Entirely through heat is the canal content treated. Through cooking, the bacteria are destroyed. The removal of the granuloma is left to the organism. This it can readily do, as a new supply of bacteria is prevented

from invading the area through the canal. The biological-physical method is definitely adopted. The author's work and the investigations of a large number of others have shown excellent results. This has been proved through x-ray and clinical check-up.

Back in 1908 the use of heat penetration was advocated. Diathermy found but few adherents among the physicians. The author credits Kowarschik's book on diathermy with the illustrations which he has used in this article.

Diathermy is a healing process by which the alternating current is sent through the body or a part of it in order to utilize the heat which is produced in its passage through the tissues. The general strength utilized in medicine for diathermy is between 100 and 3,000 milliamperes. In dentistry such as root-canal sterilization and cooking of the pulp 60 to 75 milliamperes suffice. The greater resistance, the greater the heat. Diathermy also reaches the minute branches of the pulp which have heretofore escaped. At the temperature reached, which is 69° C., albumin is coagulated. Even if the bacteria exist in the canals, not destroyed by the current, they will be robbed of means of survival through the impregnation of the canal with chloramin and hypochlorite. As the tests prove through bacteriological controls, a sterility is reached which has been heretofore unknown by any other method.

The test is simple. A paper point is introduced into an infected canal and is then cultured in agar-agar or bouillon. It shows a rich growth of bacteria. After one treatment with diathermy the point is again introduced and a culture made, and this time it is negative. This experiment has been repeated by the author in many hundreds of cases, and each time the results have been the same. Von Flohr and Wamascher also have experimented with extracted teeth and reached the same conclusions. There is no doubt that the canal is rendered sterile through diathermy.

According to present methods of root-canal work it is difficult to prevent reinfection, which usually ensues after five or six years. Through diathermy this time may be extended to twenty or thirty years. This will be enormous progress.

In sterilizing a root canal the usual procedure is followed in cleaning the canal, and this is done preferably under the rubber dam. The pulp chamber is well widened and the entrance to canals made accessible. The cavity and the tooth are carefully cleansed with alcohol and iodin. The cavity is then filled with hypochlorid. This is pumped into the canals with a fine broach.

The inactive electrode, which is the larger one, is given to the patient to be held in the hand. The active electrode, which is the wire broach, is inserted into the canals, and the patient is told to raise the free hand at the slightest twinge of pain. The current is raised to 60 milliamperes. The needle enters a third of the canal and remains two or three seconds. The current is then broken. This is done, even if the patient has felt no pain. The tooth is allowed to cool for eight to ten seconds. The needle is then advanced into the canal as far as possible without force, and the current is turned on and kept on until the patient reacts. The current is then cut off. The hypochlorite is

removed and the canal cleansed and widened. It is filled again, some chloramin powder added and the process repeated two or three times. It is necessary to use extreme caution that no moisture passes from the cavity to the gum while the current is on. The current would thereby be switched to the gum, which might be burned. Sterile paper points are used to dry the canal carefully. The current of 50 milliamperes is then passed through and the root filling is inserted. Sometimes the treatment has to be repeated two or three times before the filling of the root canal. The writer hesitates to fill the canal if severe pain or a strong flow of pus is present, or if there was a strong putrescent odor at the outset. The temperature reached in the canal has been determined at 50° C. It may be momentarily much higher, but at 50° C. all bacteria are destroyed. The production of nascent chlorin in the canal through the action of the chloramin and hypochlorite increases the bactericidal action twenty times.

If the pulp is removed under anesthesia, the pulp chamber is first opened. The electrode is placed into the canal from one to two seconds, and 60 milliamperes is given. This coagulates the albumin. Great care must be exercised, as there is no response with the pulp anesthetized and injury may be caused to the tissues. If the current is on too long, the pulp crumbles. Anesthetizing the pulp is not a good method, as any sign from the patient is lacking. The wait between applications of the current is important, because it gives the tissues a chance to cool. Burns of the soft tissues will heal within ten days. Gums which have been burned may be touched with 8% chlorozinc solution. Fillings and crowns may deflect the current if they are adjacent. The moment the patient has any pain, the current is to be disconnected.

The absorption of the granuloma may safely be left to nature, once the canal has been carefully sterilized and filled. Schroeder says that when the root canal is filled, the granuloma disappears. Canals must be filled to the end wherever possible. It has been shown, however, that excellent results have been obtained in those cases where the roots have not been completely filled, if the bacteria in the canals have been destroyed through diathermy and the chlorin treatment. Radiographic check-up shows that even in those cases the results are wonderful.

The author is experimenting with diathermy for relief of sensitive dentin. He strokes the area for a moment with the active electrode, the patient holding the inactive electrode. There is only slight pain. This procedure is repeated after several days. The author believes that the nerve endings are coagulated and sensitiveness removed. Whether the pulp itself is injured by this treatment is still uncertain.

If the current is raised to 200 milliamperes, the active electrode may be used as a knife, as it cuts through the soft tissues readily. The scar is hardly discernible. Bleeding is negligible.

In conclusion, the author believes in the future of diathermy and recommends it to the dentist as something of great value to the profession, possessing many remarkable benefits.—*Korrespondenzblatt für Zahnärzte*, January, 1931.

FAILURES IN DENTAL SURGERY, CAUSE AND REMEDY

By Wilhelm Meyer, Breslau, Germany

Dentists will frequently continue using forceps in removing a tooth when it has become physically impossible to succeed through that instrument alone. This situation occurs when the tooth has fractured below the gum line, and when the remaining root is surrounded on all sides by alveolar bone. The soft tissues become lacerated in the attempt, and a severe wound may be the result. The chisel should be used to free the roots. First, the mucous membrane and periosteum are reflected following a clean-cut incision, and the restraining bone is seen. Upon removal of sufficient bone and the release of the root the soft tissues are brought back to their original position and sutured. Healing will take place much more readily when the soft tissues have been carefully handled. A single incision is often sufficient to reveal enough of the process which is to be removed. This permits a triangular soft tissue flap, which may be restored to place and held with a single suture.

In some cases an elevator may suffice to remove fractured roots without the use of the chisel and loss of bone. A fractured molar root may be lifted out by placing the end of an elevator into the empty tooth socket and turning it upward against the root. This movement cuts through the septum, engages the root and permits its recovery.

The elevator must be intelligently applied. If the septum between the roots is too heavy, excessive force is to be avoided. Fracture of the process or even of the mandible may follow the careless or tremendous exercise of force. A heavy septum may be reduced by engaging the upper part, cutting through this and gradually cutting lower and lower a little at a time until, at the right depth, the root alongside is encountered.

The elevator should not be used in the maxilla for the removal of deeply buried roots. There is too great a danger of forcing the root into the antrum.

Soft tissues surrounding the teeth must be guarded against injury. Healing is greatly retarded when the soft tissues do not come back to place after extraction or when they have been bruised or crushed. Infection may easily be set up, with an increase in pain.

Euler has shown that the healing of extraction wounds begins at the entrance to the alveolus as against the generally accepted opinion that it heals from the bottom up. He shows through cross-sections in experimentation on dogs that the greater healing activity and granulation of the tissue are at the entrance to the wound. The blood supply is greater in the gingival tissues than in the depths of the alveolus, where the blood-vessels are closed by coagulation in the first days following extraction. Euler further showed that in cases of careful extraction with uninjured gingiva there was a continuous epithelial layer over the extraction wound. Infection of the socket is thereby prevented, and there is no doubt that carefulness in handling the soft tissues and the ensuing epithelization are the safest insurance against after-pain and dry socket.

In applying the forceps the beaks should be pushed up carefully between the soft tissue and the tooth, merely pushing aside the gingiva and not tearing nor crushing it. Suturing the wound after extraction is not to be done as a routine procedure, but there are many cases which would heal faster and with no infection if they were sutured. Where several teeth in a row are to be removed, suturing should be done, as it will keep the wound from flapping. It is not safe to do extractions and not have needle and sutures ready at hand.

In alveolotomy, where many teeth are removed and much of the alveolar process is trimmed away, suturing is definitely indicated. The rapidity with which the tissues heal is a clear lesson in the value of bringing the soft tissues into contact and holding them there with a few stitches. These cases are ready for a permanent denture in ten to fourteen days.

Infiltration anesthesia is the method of choice for the maxilla instead of block injections. About 8 c.c. of a 2% solution will suffice.

Infection of the extraction wound exhibits itself readily in severe after-pain and tenderness of the submaxillary glands on the side involved. In the beginning there is odor and a grayish smear over the walls of the socket, and later a discharge of pus. Swelling and redness also may be present, as well as temperature.

Nearly all the severe and continued cases of after-pain following extraction mean infection of the socket. The lymph glands on the affected side must be carefully examined.

In treating these cases it is incorrect and really dangerous to curet the socket. This is a simple means of spreading infection into the surrounding healthy tissue. It opens up avenues of infection by cutting through the blood-vessels in the already infected area. The author suggests a warm 3% irrigation with hydrogen peroxid to remove the old, broken-down blood clot and discharge. The socket is then dressed with iodoform gauze dipped in chlorphenol camphor. This consists of chlorphenol 30, camphor 60, absolute alcohol 10. As a remedy in these cases the author is profuse in his praise of chlorphenol camphor. It is bactericidal, brings blood to the part and relieves pain. The treatment may be repeated twice on the first day, and with the addition of anesthesin powder in severe cases. Heat is beneficial and a warm pad or hot-water bag on the outside of the cheek will relieve pain and ease the swollen lymphatics.

The secondary infection known as dry socket must be distinguished from the pain of the original tooth condition, with its pericementitis.

Where infected teeth are removed, it is best to consider them as already infected, and a light dressing as indicated will prove of value. There can only be advantage in applying the chlorphenol camphor and gauze, as it will not interfere with healing and exercises its valuable properties from the outset.

Most of the infection which arises after extraction may be attributed to lack of bleeding in the socket. Bleeding tends to clear the wound and flush it. The ultimate goal is to have the blood clot fill the socket as quickly

as possible, for here we have nature's most efficient means of protecting the wound and restoring the missing tissue. A blood clot is delayed when an excess of suprarenin is employed. This is frequently the case when the novocain is taken from ampoules. For ordinary extractions the suprarenin should not exceed .000015 per c.c. In ampoules this sometimes reaches .00005 suprarenin per c.c. With little bleeding to protect the socket, saliva enters the dry alveolus, and infection is most likely to occur.

The author concludes with a warning against the use of an excess of suprarenin in surgery and states that such excess is frequently to be found in the already prepared solutions.—*Fortschritte der Zahnheilkunde*, March, 1931.

DENTAL ECONOMICS

The Physical Significance of Oral Disease to Its Victims*

By GEORGE WOOD CLAPP, D.D.S., New York, N. Y.

And now, my dear Doctor, we are beginning to draw in a little toward a closer discussion of your statement that dentistry is a profession, a WHOLE profession and nothing but a profession, and of my reply that if that is the case, some of us would like to know it.

In the last article we glanced very briefly at the economic significance of oral disease to its victims. Let us here inquire, as well as we can in one short article, what may be the physical significance of oral disease to those who suffer from it.

There seem to be four important differences between oral disease and some other forms of disease, which may be summarized about as follows:

(1) So far as the effects of oral disease are confined to the mouth, they do not constitute a very serious threat against the general health.

(2) The real significance of oral disease may lie in the fact that the mouth may be a barometer of diseased conditions in some other parts of the body, and that oral disease may cause disease elsewhere in the body.

(3) The tissue destroyed by some forms of oral disease may be more satisfactorily repaired or replaced than the tissue destroyed by some other forms of disease.

(4) The teeth are more easily separable from the body than most other organs.

Some of the Facts Self-Evident

To take these summaries in reverse order, the teeth are so much more readily separable from the body that, under some conditions, the body gets rid of them without outside aid. Some extractions impose a considerable strain upon the body because of their extent, some because of conditions surrounding the extraction, and others because of the patient's general condition.

Tonsillectomy is one of the simplest surgical operations, but the removal of two tonsils is more of an operation, from the average patient's point of view, than the ordinary extraction of two teeth.

The tooth tissue destroyed by oral disease may generally be repaired with an ease and satisfaction quite impossible with other tissues of the body. Small wounds in soft tissues are usually self-repairing. Serious wounds and burns may be repaired by modern sur-

*This is the sixth of a series of related articles. The first appeared in the January issue.

gical methods, but not generally with the ease and comfort, from the patient's point of view, that attends the repair or replacement of several teeth. A lung which has been damaged by tubercular infection or pus may repair itself, but only at the expense of loss of function in the repaired area, while teeth may sometimes be repaired unto perfect function.

When a part of the body other than the teeth and their supporting tissues has been lost, the replacement is rarely so effective as it is in the mouth. The artificial eye does not see, the artificial hand does not pick things up, and the artificial leg serves merely as a crutch to help the owner limp about.

Even when all the natural teeth have been lost, artificial dentures may often be made to maintain the most desirable proportions of the face, to retain or restore the habitual expression in repose or smiling, to effect clear enunciation in speech, to masticate food efficiently and perhaps to conceal from rather critical observation the fact that any teeth have been lost.

Other Facts Not So Self-Evident

When we pass out of the field of these self-evident facts with their relatively slight bearing on the general health, we come to some not so readily evident and perhaps of much greater physical significance. Oral disease may be an expression of pathological processes operating generally throughout the body but more readily visible in the mouth than elsewhere. Oral disease may contribute to disease in other parts of the body, where it may not be readily discernible or susceptible of cure or repair.

Two Conceptions of the Origin of Oral Disease

Our conception of the significance of oral disease to its victims will depend in no small degree on what we think is the origin of oral disease in the four forms under which it has been listed in the previous articles in this series—jaw deformities with malocclusion of the teeth, dental caries, pyorrhea and periapical pathology.

One who reads and listens might perhaps divide the different views into two groups. This might not be sufficiently exact for a technical study, but since it is intended merely to help our general conceptions, it may be worth while to attempt such an arrangement here.

One group seems to hold that the causes of oral disease arise entirely within the mouth. Dental caries is said to be due solely to the formation of acid under plaques in contact with enamel. Pyorrhea results solely from accumulations on and about the teeth. Death of pulps and periapical pathology result solely from dental caries or violence or some similar cause. This conception of the cause of oral disease has been in the mental saddle for the last fifty years. Probably its adherents today greatly outnumber those who hold different theories.

If this view is a sufficient explanation of the causes of oral disease, your statement that dentistry is a WHOLE profession (meaning, probably, that it stands alone and unaided on its own professional feet) is correct. Unless this view is a sufficient explanation of causes, your statement is not correct.

The other group of theories is not so well defined, perhaps because it is newer and deals with causes which are general rather than specific and are therefore not so easy of identification and demonstration. Knowledge is accumulating which may make a crystallization of the theory possible before many years.

Perhaps it would be a fair statement to say that those who fall mentally in this group do not believe that local causes are a COMPLETE explanation of oral disease. They do not deny the action and importance of local causes, but they do not believe that local causes alone produce oral disease.

For years many of us thought of the teeth as more or less outside some of the laws which reign supreme everywhere else in the body. We know that the other organs of the body have an inherent resistance to disease, and that the effectiveness of it depends on the physical inheritance and life habits of the individual on the one hand and the dangers to which he is exposed on the other. When the inheritance and habits are good, the body opposes an astonishingly high resistance to its enemies. Not this only; it has a reserve force which can be called on for extraordinary efforts toward recovery when some portion of the body has been overwhelmed.

We used to think that the teeth had no such power of resistance and no such reserve power of recovery. Once formed, they were exposed to the unopposed attacks of the agents of decay. According as external circumstances happened, they might succumb or might not. If dentist and patient kept the mouth sufficiently clean, the teeth would not fall before the attack; if the dentist failed with his instruments and the patient with brush and dentifrice, the teeth would surely decay. Salvation for the teeth was wholly from without, not at all from within.

But not all of us now think that way. Some of us are now beginning to believe that fully erupted and fully formed teeth are much more under the reign of the laws of life than that.* We are beginning to think that under optimum conditions they may have powers of defense similar in principle to those of the other organs—slower in action and less in degree, but sufficient to their place and function. We do not yet know how these laws operate in teeth, but we are finding one fact after another that keeps bright within us the flame of hope that some day we shall know.

Many members of this second group believe that local causes produce dental caries or pyorrhea, only when there has been some lowering of the optimum resistance-power of the body. Such a lowering might result from any of many causes, such as food deficiencies, intoxication, fatigue, exposure, violence or strong bacterial invasion. They view the fact that local causes have been able to induce caries or pyorrhea as evidence of a break in the body's defensive powers.

THE LOWERING OF GENERAL RESISTANCE

It is logical for one who holds such a belief as that just cited to feel that

* This sentence is phrased in this way because evidence is accumulating to show that several years may be required, after the eruption of a tooth, before its structure and probably its defenses are complete.

the lowering of resistance will not be confined to the mouth, but that it may and probably will arise from causes operating elsewhere in the body and will be effective throughout the whole body.

Because most of the other organs of the body have a more active circulation than the dentin and the enamel and respond more readily to the stimuli from irritations, they may not yield so readily to invasion or infection as do the teeth. Because they are hidden from sight, it may not be so easy to recognize early symptoms of invasion or degeneration as it is in the mouth. We know also that very serious degenerative changes may occur in some organs without giving rise to symptoms which reveal their existence or progress until, in some cases, a fatal termination is at hand.

It is not proposed to examine here any of the reasons why some of us hold the second belief which has been outlined or to inquire what the significance of such a belief must be to us as dentists. Perhaps we can do that later. We shall inquire here only as to what significance the difference between these beliefs may have for the victims of oral disease.

The Significance of a Difference Between Two Beliefs

If caries, pyorrhea and dead pulps mean only that mouths have not been kept clean, and that some teeth have been subjected to violence, and if the threat to the general health is confined to such uncleanliness as flows from the mouth into the digestive tract, the physical significance to the person who is in optimum physical condition may not be very serious. He may employ a dentist to clean his teeth occasionally, and he may give them some home care. He may have decayed teeth filled and missing teeth replaced or, if he cannot afford that, he can go without teeth as many another has done before him. If this conception is right, he may thereafter follow whatever manner of life pleases him, assured that the consequences of oral disease are past. Pain, deformity, expense—these will measure the significance of his oral troubles.

But, if this conception of oral disease as local in cause and consequences is not sufficient, if oral disease occurs only when the defenses which shield the body against illness have been lowered so that this disease and perhaps others have entered, the picture changes at once and completely. The pain and deformity are still important and must be attended to, but they are no longer first. The fact that overshadows all others is that the citadel of the life is threatened, perhaps in some way which has not shown its manner or place of attack except in the mouth.

It is not impossible nor improbable that the body's defense may first have been broken through somewhere outside the mouth. The victim's quest then becomes not one for fillings and cleanings and plates alone but for this hidden enemy which, striking from the dark, threatens his physical welfare.

During that search the mouth becomes a very important barometer as to the success of the curative measures which are adopted. There may be no other barometer whose readings are so clear. Returning health may be visible to the discerning dentist in improved

tooth color, in the cessation of caries and in the texture and color of the gums. Observation seems to show that while the mouth remains healthy, the general resistance stays high.

Solomon was much, much wiser than he knew when, nearly three thousand years ago, he wrote, "He that keepeth his mouth keepeth his life."

The next article will try to make plain the significance of oral disease to us as dentists and the line of demarcation between some dentists as professional men and others as craftsmen, which it rather clearly establishes.

After that we shall study the functions of business as making some dentists financially successful as one or the other.

(To be continued)

PRACTICAL HINTS

THIS DEPARTMENT IS NOW BEING CONDUCTED FROM THE OFFICE OF THE DENTAL DIGEST. TO AVOID UNNECESSARY DELAYS, HINTS, QUESTIONS AND ANSWERS SHOULD BE ADDRESSED TO EDITOR PRACTICAL HINTS, THE DENTAL DIGEST, 220 WEST 42D STREET, NEW YORK, N. Y.

NOTE—Mention of proprietary articles by name in the text pages of THE DENTAL DIGEST is contrary to the policy of the magazine. Contributions containing names of proprietary articles will be altered in accordance with this rule.

Editor, Practical Hints:

I was extremely gratified at your timely and comprehensive response to my query concerning dry socket, and I wish to state here my sincere thanks.

However, there are just a few points that I should appreciate your clearing up.

(1) As you state that "there is always danger of spreading the infection by curettage, etc." and advise light curettage, what is the dividing line between the proper degrees of curettage? Should bleeding be stimulated by scraping the socket, or should the contents of the socket be removed without in any way impairing the condensing bony wall of defense where the real battle is being fought?

(2) Would a conductive take the place of a general anesthetic when curettage is resorted to?

(3) Were it granted that curettage is always attended by a definite risk, would it not be safer always to avoid this procedure and resort to dressings and irrigation until relief finally comes?

(4) I should like to try the camphophenique dressing and aspirin, but I should appreciate more specific instructions. Is iodoform gauze or a plug of cotton the medium? And how should the camphophenique and aspirin solution be combined?

(5) Are there any other uses for trichloracetic acid and menthol?

J. L.

ANSWER.—(1) When some men curet, they go at it more or less blindly and with a great deal of force. This is very likely to spread the infection and cause damage. In cases of dry socket the curettage should be very light, the purpose being to remove the necrotic tissue that is present. The alveolar walls should not be scraped.

(2) Probably conduction anesthesia would be satisfactory. Infiltration should never be used, since that causes additional trauma and lowers the resistance of the area affected.

(3) It would be practically impossible to remove all the necrotic material except by curettage.

(4) A tablet of aspirin is dissolved in glycerin. Gauze that has been soaked in camphophenique is placed in this solution and then carried to the wound. Dry sockets should never be *packed,* only dressed lightly.

(5) Other uses for trichloracetic acid are the destruction of hypertrophied tissue, the treatment of canker sores, in 15% solution for swabbing the gums in ulcerative gingivitis.

Editor, Practical Hints:

I have a patient about forty years old who has a very bad case of gingivitis, especially involving the lower anteriors. The gums in the area bleed excessively.

I have scaled the teeth, treated the gums with Talbot's solution and also advised the patient to use sodium perborate, but the case seems very difficult to get results. Please advise what it is best to do.

D. W. G.

ANSWER.—First of all, it would be well to take x-rays in order to ascertain the condition of the alveolar process, the number and location of pockets and their depth. You may have missed some and not reached the bottom of others.

The second thing to do is to check up on the occlusion, not only centric occlusion but also during the various movements of the jaw. Traumatic occlusion is a cause of gingivitis and, when present, should be relieved.

Editor, Practical Hints:

I should be glad if you could tell me if in your opinion or on any other authority there is any reason why bright or flush spots should appear on the cheeks of children during the early months of the deciduous teething period. I cannot understand why, as there is no connection between teething and the sympathetic nervous system; yet I have often seen these spots during this particular period and should be very grateful for an explanation. Naturally a temperature caused from the child's continual fretting would cause the flush, yet I have seen it when the child otherwise appeared normal and no temperature could be registered.

G. E. D.

ANSWER.—As you state, a fever would cause a flush, but we do not believe that you are wholly correct when you say that a nervous stimulus caused by teething would not be reflected by the sympathetic nervous system.

We shall be glad to publish your letter, as soon as space permits, in the hope that some of our readers may be able to give you more definite information.

Editor, Practical Hints:

Would you be so kind as to give me an opinion as to the cause of and treatment for the following condition:

Patient, male, aged about fifty, in good health and physical condition, complains of a soreness and irritation like a burn covering the palate, especially the anterior portion. The palate appears whitish and lacking in tone, and when last seen the median line was sprinkled with small canker patches (I do not think these characteristic of his trouble). There is no clinical evidence of infection. The soreness is more pronounced after smoking. Dakin's solution of euroform paste relieves the condition. Mild alkalin mouth preparations are of no value.

I am of the opinion that his smoking is the cause of the trouble and that the

tissues of the palate are hypersensitive. Furthermore, I think that he will be bothered as long as he smokes, even if he does use a holder for cigars and cigarettes, until such time as he wears an upper denture.

R. P. C.

ANSWER.—The symptoms you describe resemble somewhat those of leucoplakia, a condition very hard to cure and which may lead to serious results. All forms of irritation should be removed and the oral hygiene maintained at its highest efficiency. Smoking should be entirely stopped. Syphilis and tuberculosis are among the predisposing causes.

REPLY TO A. H.—May I suggest to A. H. (April, 1931) that the easiest way to protect the teeth of a saxophone player is to put rubber on the mouthpiece.

H. LINCOLN DUNN, D.M.D.

Editor, Practical Hints:

A lady patient, 25 years of age, complains of a very peculiar affliction.

Upon waking in the morning she can hardly open her jaw. All day long there is a continual clicking in the joint on the right side. When the jaw is relaxed, it seems to feel rather heavy. At times there is pain upon trying to open the jaw wider.

There is not much past history to the case, except that she had her tonsils removed about a year ago, and she claims that this clicking and semitrismus occurred immediately after the tonsils were removed. I wonder if you could give me any information on this.

I wish to ask you also in regard to gold inlays, if there is anything known to prevent thermal changes. On most of my inlays patients complain that they are unable to drink hot or cold liquids without great shock.

J. S. B.

ANSWER.—From the symptoms you describe, the case appears to be one of infection in the temporomandibular joint. Plate x-rays might permit of a diagnosis by a roentgenologist.

In a properly constructed and placed inlay the thermal conductivity should be reduced to a minimum, since the whole of the cavity is lined with cement. In deep cavities the pulps may be irritated when the cement is applied, but this should either wear off or progress to a pulpitis. Perhaps you are mixing your cement too thin, with the result that there is free phosphoric acid.

Editor, Practical Hints:

Will you please tell me how to control excessive salivation when working in the mouth? Atropin has been suggested. Can you tell me how it is administered?

E. W. H.

ANSWER.—In cases of excessive salivation, when the rubber dam cannot be used, two pills of atropin sulphate, gr. 1/160 (.004 gm.), may be given to the patient—one pill being taken the night before and the other on the morning of the appointment.

Editor, Practical Hints:

I am using blue inlay casting wax for taking impressions of inlays. I find it very unsatisfactory to work with and

wonder if there is not a more usable casting wax, one that is more pliable, one that does not get brittle so quickly.

In treating posterior teeth for hypersensitive dentin I use silver nitrate and eugenol. In anterior teeth this is not always permissible. Can you advise me what to use for such conditions in anterior teeth?

I have had three cases in the last two months of opening up old root canals and having them get very sore, necessitating extraction. The history of one is as follows:

I had x-rayed and found that the previous root-canal treatment was not very thorough. It had been in for eight years. I opened up the canal and found a cotton filling, damp, ill-smelling. I removed it and put in a wet dressing for 24 hours. I repeated this dressing (camphophenique) for another 48 hours and then filled the root canal with a filling material that I have long employed with satisfaction. In 24 hours it was exceedingly sore, and after making several attempts to correct the condition I removed the tooth. The filling material had not gone through the apex. I feel that it was not the filling material as much as micro-organic action following introduction of air and possibly the camphophenique.

Another case is of a tooth apparently dead for some time, but the root canal had never been treated. I opened and cleaned the canal without much pain. I sealed in a similar dressing, and there was almost continuous pain for 48 hours. I extracted.

I shall be glad to have your advice.

F. C. McL.

Answer.—We believe that you will find the green wax better than the blue. The danger with a pliable wax is the chance of distortion after it has been removed from the cavity.

Hypersensitive dentin in anterior teeth may be treated with a saturated solution of zinc chlorid, though this is not so effective as silver nitrate.

You are right in believing that the flare-up of the non-vital teeth is due to the admission of oxygen. There is no way to prevent this, and the patient should be warned of the possible consequences before the tooth is opened.

Erythema.—I wish to report the following case:

Patient, female, married, aged 32 years. Had been treated for six and a half years for erythema on the crotch by some of the leading dermatologists in Greater New York, who attributed the condition to childbirth. She has presented herself to me for treatment of the left upper central incisor, which examination showed to be periapically infected. Upon removal a large granuloma was also removed. Gradually there was a clearing up of this irritation, and four months later it has entirely disappeared without any further treatment.

Irving Weinberger, D.D.S.

Editor, Practical Hints:

I should greatly appreciate your comment on the following case:

The patient, male, 37 years of age, has lost the right upper first molar and wants it replaced by a bridged pontic. He has an M. O. D. inlay in

the right upper second bicuspid and an M. O. inlay in the right upper second molar.

The most conservative way to replace this molar would be with a pontic attached to the molar by an M. O. inlay and with a rest on the bicuspid inlay. (Fixed bridge is desired.)

Now the question that arises is, will the bridge be dislodged by the downward pull in mastication or will the bridge by its weight cause a sensation of something pulling on the second molar all the time because of gravity?

I have been successful with this type of bridge below and have bridged upper teeth with inlay bridges attached at both ends, but in this case I do not want to disturb the M. O. D. in the bicuspid.

R. C. M.

ANSWER.—There seems to be a question as to whether or not the bridge, as you outline it, would be satisfactory. It would be held only by an M. O. inlay, and it is probable that the stress of mastication would loosen it.

It would be much better to attach it to the second bicuspid with a new M. O. D. The only other alternative would be an M. O. D. on the second molar.

Editor, Practical Hints:

I am asking for information and assistance for a condition that I find very painful to both my patients and myself. Using myself as the subject, I have a very well developed case of receding gums. My teeth are exceedingly sensitive to sweets and temperature changes, particularly cold. I sleep with the window open winter and summer. During the colder months, if I should start breathing through my mouth (for any cause, cold, etc.), it would awaken me. I can perceive that this case is getting worse as the months go by.

I know that solutions of nitrate of silver are a great help where you can use it, but objectionable in the anterior of the mouth. If you could offer any suggestions that have merit, you will find me personally very grateful to you.

R. E. J.

ANSWER.—A saturated solution of zinc chlorid may be used in place of silver nitrate, though it is by no means so effective. This, however, is treating the symptoms only and not the cause.

Sensitive cervices of teeth are generally believed to be due to acid in the saliva and in the glands of the gingivae. This, of course, goes back to constitutional causes. Franken has written a very capable article on this subject which appeared in the January, 1931, issue of *The Journal of the American Dental Association.*

Editor, Practical Hints:

Kindly tell me of what Churchill's iodin consists.

T. M. T.

ANSWER.—The formula for Churchill's iodin is as follows:

Iodin	1 dram (4 gm.)
Potassium iodid	2 drams (8 gm.)
Water	4 fluid drams (16 c.c.)

The solution should be kept in a glass-stoppered bottle for several months before it is used.

DENTAL SECRETARIES and ASSISTANTS

Secretaries' Questionnaire

All communications should be addressed to Elsie Pierce, care of THE DENTAL DIGEST, 220 West 42d Street, New York, N. Y.

NOTE—HAVE YOU A BETTER WAY? HAVE YOU A TIME-SAVING SHORT-CUT? DO YOU KNOW A "STUNT" THAT LIGHTENS THE WORK OR MAKES FOR GREATER EFFICIENCY IN THE OFFICE? IF SO, WRITE TO ELSIE PIERCE. YOU MAY HELP MANY GIRLS WHO ARE BEGINNERS—AND YOU KNOW HOW YOU NEEDED HELP DURING YOUR FIRST FEW MONTHS IN A DENTAL OFFICE. PERHAPS YOU NEED HELP NOW. WRITE TO ELSIE PIERCE—SHE WILL HELP YOU.

Dear Miss Pierce:

I should like you to advise me as to the best way of spending my time when the doctor is at the chair. I know you will say that this depends on the dentist for whom one is working. However, I do not feel that it is right to sit and read a magazine, yet it seems better to do this than to remain in the operating room when there is nothing for one to do. I should appreciate a word from you on this subject.

R. M., (D. H.), New York

ANSWER.—As you do not specify what your duties are in the office, I take it for granted that your services are general, though you sign yourself a dental hygienist. If I am correct, and if you are supposed to do general assisting when you are not busy with your own specialty, there are many things with which you could busy yourself. For instance, the secretarial work, such as keeping the records up to date, posting the charges ready for billing, keeping the x-ray and other files in order, building up a list for monthly prophylactic calls to patients who have not been in for some time or for examination, sending out call letters or cards to patients, maintaining a correct inventory of office supplies and ordering those that are needed or running low, caring for correspondence such as may be dictated by the doctor either at the beginning of the day or after the close of appointments in the late afternoon, these to be done during the next day; checking up on laboratory work and charges, doing general bookkeeping each day, and making out and sending bills as work is completed or on the first of the month, etc., can keep you very busy at the desk or in the business office, all of which contributes to practice-building.

If you enjoy doing things with your hands, why not spend some time in the

laboratory? You can pour models, open them, prepare wax bites and baseplates, invest and cast inlays, etc.

Cabinet drawers always need attention, and so do supply closets and desk drawers. Medicaments need to be bottled and labeled for every-day use. Instruments need sharpening. Wipes, applicators, sponges, packs, etc., always need replenishing. All these things, with the help you can give the doctor and the patient in getting ready for each piece of operative procedure, as well as sterilizing the instruments, answering the telephone, making appointments, etc., should keep you so busy every minute of the day that you will have no time to sit and read a magazine. Keep busy and you will keep happy, and incidentally you will add to your knowledge, which is always the way to success.

We have received several requests for a copy of the letter that E. T., of Chicago, sends to patients who have not been in for six months or more, as she suggested be done in dull moments.* The following came from E. T. as a reply to our request for some copies that we might send to our readers:

Dear Miss Pierce:

Herewith is the letter that I send to patients. I always write the date of the last work done, as it gives them a feeling of getting personal attention. I also think it a splendid idea for the assistant to sign her own name to the letter, so that the patient may know that the assistant has the patient's welfare in mind, and it places the assistant in better standing with patients. . . .

I am so happy to know that dental assistants take an interest in their work, because I sincerely feel it is a wonderful field, and if the financial end is well taken care of in the office, it will help promote business and be to her advantage. May I thank you on behalf of myself and my assistant friends for the splendid work you are doing for us. (Letter follows.)

(Date) .....

Miss Anna Smith
777 Blank Street
Chicago, Ill.

My dear Miss Smith:

Your dental work was completed on (date). In order to preserve your health and teeth, I would advise that you call for an appointment to have your teeth scaled, cleaned and examined.

Sincerely yours,

.....
Secretary

Dear Miss Pierce:

Here is a copy of the letter that I send out from my office to patients who have not been in for some time. It may help some of your readers as so many of the fine suggestions in your columns have helped me.

I hope the Questionnaire will never be discontinued. It is the first thing we look for in our office, doctors included, and I am going to repeat what one of them said the last time: "That Elsie Pierce is a wizard. I wonder where she gets all her information. It's all so varied and always helpful."

Now, don't you think we appreciate you in our office?

L. F., Penn.

(Date) .....

Miss Blanche White
1000 Blank Blvd.
New York, N. Y.

Dear Miss White:

We note on our records that you have not been in our care since (last date in office). It

*The Dental Digest, February, 1931.

is our desire to aid you to maintain your teeth and health in the best condition possible, and to this end we have set aside an appointment for you for an examination on (date), recalling the day of week and time of day you prefer, and trust this will be satisfactory.

Please find enclosed a stamped envelope with return card confirming the appointment, which we shall appreciate your signing and mailing for our records.

Thanking you for your courtesy and past favors, we beg to remain.

Very truly yours,

....., D.D.S.

Dear Miss Pierce:

For a year I have been working after school hours and on Saturdays in the dental office which is a part of this Home. Since we are rather secluded from the rest of the community, it seems that I am ignorant of many things that I should know concerning the work for a dentist. I have another year of high school, and I want to prepare for my chosen career. There are 500 or more persons in the Home. Each must be cared for several times a year, and monthly as well as yearly reports must be made out for the trustees. Things must be kept clean, and we have many telephone calls to make.

Several times I have been told that I do not approach patients properly and I realize it. Can you help me?

Also, can you send some material explaining the work of a dental assistant? I should appreciate it very much.

E. S., New York

Answer.—Your manner of approach to patients, as the assistant to the dentist, should be pleasant and yet dignified. A cheerful greeting such as, "Good morning, Mrs. Smith! How are you this morning?" accompanied with a smile and, "The Doctor will see you presently," will place the patient at ease. Do not linger to gossip or chat at length. If the patient asks a question, answer it if you can in a tactful, impersonal manner, but do not encourage long conversations, as that is not what you are there for. The dismissal of a patient should be just as pleasant, leaving her with a feeling that you have been glad she came. Do not react in an unpleasant manner if a patient is surly or fault-finding or cross or fails to respond to your greeting. Most people come to a dental office in fear and trembling, and it takes pleasant surroundings, the quiet, efficient actions of the nurse and doctor, sympathetic attention, etc., to help restore their confidence and good nature.

As regards the explaining of the regular work of an assistant—it would take a book. We suggest that you read all the back numbers of The Dental Digest you can secure, and that you be observant of all the details of the dentist's operations, what he uses, etc., so that you can anticipate his wants and those of each patient.

Write to the Package Library Department of the American Dental Association, 212 East Superior Street, Chicago, Ill., as for a nominal sum they will send you a collection of articles, pamphlets, etc., which you can read and return. These should give you much information of value.

Educational and Efficiency Society for Dental Assistants, First District, New York, Inc.

A regular meeting of the Educational and Efficiency Society for Dental Assistants, First District, New York, Inc., was held on April 14, 1931, when an excellent paper on *Things the Dental Assistant Should Know* was presented by Dr. William Rosenbaum. The officers for the ensuing year were nominated, as follows: President, Mary A. O'Connor; Vice-President, Blanche Ferraro; Corresponding Secretary, Frances Green; Registrar, Gertrude Gehm; Directors, Elizabeth V. Shoemaker, Juliette A. Southard, Ethel R. Meyerson.

At the regular Clinic Club meeting on April 20th a demonstration on the mixing of cements, amalgam and synthetic porcelain was given. At the May 18th meeting an Open Forum and Round Table Discussion on dental assisting was held, proving of great interest and value to the participants. The Clinic Club, representing the Society, presented a clinic on *Sterilization and Economy Suggestions* at the session on May 15th of the convention of the Dental Assistants Association of the State of New York. These meetings concluded the activities of the Clinic Club until September. During the past season members of the Club have given clinics demonstrating the work of the trained dental assistant and the extent of her usefulness at the meetings of the First District, Second District, Kings County, Westchester and Eastern Dental Societies. The Club meets regularly on the third Monday evening of each month, September to May, inclusive, to discuss the various phases of dental assisting and to evolve more efficient methods of dental-office management. Membership in the Clinic Club is open to members of the Society.

The Library, a collection of important and valuable papers and books pertaining to the dental assistant and her work, will be open to members of the Society during the summer. Any papers or books included in the collection may be borrowed by application to the Librarian, Miss Sylvia Messinger, 516 Fifth Avenue, New York.

The close of the class on bacteriology, sterilization and pathology, held at the Dental School, Columbia University, New York, brought to an end the classes for the season, which had included also laboratory assistance, gold casting, inlay technic and x-ray technic. The classes conducted by the Society throughout the season are under the direction of competent instructors. Sessions are held in the evening, once each week, and are open to members of the Society. Class activities will be continued in the fall.

The Society meets regularly on the second Tuesday evening of each month, October to May, inclusive. Dental assistants employed in ethical dental offices are eligible to join and are urged to take advantage of the many educational opportunities offered by the organization. All activities will be resumed in October.

Montreal Dental Assistants Association

The annual meeting of the Montreal Dental Assistants Association took place at the Montreal Dental Club Room on April 20, 1931, with Mrs. M. McKennan in the chair. Various reports were read and adopted which showed considerable progress in the work of the association. Letters were read from the president of the Toronto Dental Assistants and from the Alumnæ Dental Nurses Society of Toronto.

The election of officers resulted as follows: Miss E. Currie, President; Miss E. Stubina, Vice-President; Miss E. A. McKee, Secretary; Mrs. M. McKennan, Recording Secretary; Miss G. Robinson, Treasurer; Mrs. M. McKennan, Hon. President; Miss M. McLean, Hon. Treasurer; Miss Rachel Ratner, Chairman Publicity; Miss Lily Coleman, Membership Committee; Miss L. Williams, Chairman Entertainment Committee.

A vote of thanks was given to Miss Rachel Ratner for the splendid cooperation she has rendered to the association since its inception. A special vote of thanks was moved and carried to Dr. E. Dubeau, Dean, University of Montreal; Dr. A. L. Walsh, Dean, McGill Dental Faculty; Dr. George S. Cameron, Professor of Prosthetics, McGill Dental Faculty; and Dr. Ross Cleveland, President, Montreal Dental Club, for the appreciation of their assistance and support.

Colorado Dental Assistants Association

The regular meeting of the Colorado Dental Assistants Association was held on April 7, 1931, in the rooms of the Smedley Group. Miss E. Burchfield presented a paper on *Personality,* and Miss Marguerite Doughty one on *Parliamentary Procedure.* Miss Verna Robertson reported several plans being considered by the Ways and Means Committee for making money. The Association voted on the guard for the National Pin, which is in the form of a round letter *C* with a columbine, the State flower, in the center.

BOOKS RECEIVED

A BOOK MAY BE AS GREAT A THING AS A BATTLE—DISRAELI

Applied Orthodontia — An Introductory Text for Students and Practitioners of Dentistry, by James David McCoy, M.S., D.D.S., F.A.C.D., Professor of Orthodontia, College of Dentistry, University of Southern California, Los Angeles, Calif.

In the early days of orthodontia the mechanics of treatment occupied the greatest attention. It is only recently that more study has been given to the underlying biological principles, and the reason for the relapse of many cases has been more clearly understood.

This book is carried out along these lines, and the appliance is touched on as a means to an end and not as the chief factor in the process. Biological factors, habits and other underlying causes of malocclusion are given the importance they deserve.

No one volume can present a comprehensive survey of the field of orthodontia, but the popularity of this book, which is now in its third edition, is an indication of its value, a value that is not confined to the man who intends to specialize. In the future it will be necessary for the general practitioner to know more about this subject.

339 pp., with 239 illustrations and index. Philadelphia, Pa.: Lea & Febiger, 1931.—A. M. J.

Dental Roentgenology, by LeRoy M. Ennis, D.D.S., Assistant Professor of Roentgenology, Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania; Instructor in Dental Roentgenology, Graduate School of Medicine, University of Pennsylvania; Captain, Dental Reserve Corps, U. S. A.

In the preface the author sounds a warning against the intensive campaign carried on by certain manufacturers for the sale of x-ray apparatus. It follows the old slogan of "You press the button and we will do the rest." This may be true of photography, but its application to roentgenology is likely to be dangerous. From our personal experience we have seen too many negatives presented as a means of diagnosis that were utterly worthless.

This book, from the technical standpoint, is perhaps no better than some others, but its value lies in the amount of space devoted to the histology and pathology of the oral cavity as shown by the x-ray. It is of little value to take a perfect negative and then not be able to recognize what is shown.

The reproduction of the films is very good and the presswork is up to the usual high standard of this publisher. The advertising of certain dental products by the continual repetition of trade

names is to be deplored and seems to the reviewer to be wholly unnecessary.

283 pp., with 582 illustrations and index. Philadelphia, Pa.: Lea & Febiger, 1931.—A. M. J.

Procedures in Modern Crown and Bridgework, by Lee Walter Doxtater, D.D.S., Professor of Crown and Bridge Prosthesis, Dental School of New York University.

The need for a thoroughly modern treatise on crown- and bridgework has long been felt, and this book presents the subject in a most acceptable manner. It also clearly shows the trend from the removable to the fixed bridge. The various technics are given and are fully illustrated, which adds greatly to the value, and the subject of occlusion is given the importance it deserves, for a bridge not only should fill an edentulous space but also should be efficient in use and as harmless as possible to the surrounding structures. One chapter is devoted to opening the bite, perhaps one of the hardest operations in dentistry to perform successfully.

This work can be unreservedly recommended to the student and practitioner as a reliable and up-to-date source of information on a subject that is becoming more and more prominent in dental practice.

468 pp., with 577 illustrations and index. Brooklyn, N. Y.: Dental Items of Interest Publishing Co., 1931.—A. M. J.

FUTURE EVENTS

THE NORTHERN OHIO DENTAL ASSOCIATION will hold its Seventh-fourth Annual Meeting at Hotel Winton, Cleveland, Ohio, June 1-4, 1931.

These meetings, as in the past, will be featured by teaching clinics; that is, the essayist will give a practical demonstration also in the form of a clinic.

The following essayists and clinicians will appear on the program:

W. J. Charters, Des Moines—*Toothbrush Manipulation*
F. Blaine Rhobotham, Chicago—*Children's Dentistry*
Howard C. Miller, Chicago—*Oral Surgery*
Arthur J. Cramp, Chicago—*Patent Drugs*
Stanley D. Tylman, Chicago—*Fixed Bridgework*
Milton T. Hanke, Chicago—*Diet*
M. M. DeVan, Philadelphia—*Full Dentures*

A cordial invitation is extended to all ethical dentists.

WALTER S. SARGEANT,
Publicity Chairman,
807 Nicholas Bldg., Toledo, Ohio.

THE MISSISSIPPI DENTAL ASSOCIATION will hold its annual meeting at Gulfport, Miss., June 4-6, 1931. All ethical dentists are invited.

A. S. HOPKINS, *Executive Committeeman,*
Gulfport, Miss.

THE TENNESSEE BOARD OF DENTAL EXAMINERS will meet at the Dental Department, University of Tennessee, Memphis, Tenn., June 8, 1931, at 9 A. M., for the purpose of examining all applicants who present credentials acceptable to the Board. Hygienists also will be examined. Bring credentials to the Board meeting for examination by the entire Board.

Applications should be in the hands of the Secretary five days before the Board meeting. For application and clinical requirements, address

F. W. MEACHAM, *Secretary-Treasurer,*
911 Hamilton National Bank Bldg.,
Chattanooga, Tenn.

THE GEORGIA STATE DENTAL SOCIETY will hold its Annual Meeting at the Biltmore Hotel, Atlanta, Ga., June 10-12, 1931.

G. A. MITCHELL, *Secretary,*
Candler Bldg., Atlanta, Ga.

THE MASSACHUSETTS BOARD OF DENTAL EXAMINERS will hold an examination for registration for both dentists and oral hygienists in the City of Boston, Massachusetts, June 10-13, 1931. All applications must be filed at the office of the Secretary at least ten (10) days before date set for examination.

Full information, application blanks, etc., may be secured at the office of

W. HENRY GRANT, *Secretary,*
Room 146, State House, Boston.

THE MINNESOTA STATE BOARD OF DENTAL EXAMINERS will hold its next meeting at the University of Minnesota, June 12-20, 1931. For application and further information, address

DR. WALTER H. SMITH, *Secretary.*
2337 Central Ave., Minneapolis, Minn.

THE INDIANA STATE BOARD OF DENTAL EXAMINERS will meet in the House of Representatives Room of the State House, Indianapolis, Ind., on June 15, 1931, at 8:00 a. m., for the purpose of conducting an examination of all applicants for licensure in Indiana who come with proper credentials and are accepted for examination.

All applications should be in the hands of the secretary one week before the meeting. The examination will probably last through four days. For applications, clinical requirements and other information, address

J. M. HALE, *Secy.-Treas.*
Mount Vernon, Ind.

EXAMINATION FOR APPOINTMENT TO DENTAL CORPS
UNITED STATES NAVY

A competitive examination for appointment to the Dental Corps of the United States Navy will begin June 15, 1931, at the U. S. Naval Medical School, Washington, D. C. Candidates

must be citizens of the United States, between twenty-one and thirty-two years of age at the time of appointment, and graduates of recognized dental schools. The examination will be both theoretical and clinical and the usual duration is about seven days. A circular containing full information relative to the Dental Corps and the prescribed form of application may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C. No allowance is made for the expense of applicants appearing for examination.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examination of candidates for commission as Assistant Dental Surgeon in the Regular Corps of the U. S. Public Health Service will be held at Washington, D. C., on June 15, 1931.

Candidates must be twenty-three years and not over thirty-two years of age. They must have been graduated in dentistry at a reputable dental college and have had a total of seven years' educational training and practical experience. They must undergo a thorough physical examination and must satisfactorily pass oral, written and clinical tests before a board of officers.

Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Request for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

THE DELAWARE BOARD OF DENTAL EXAMINERS will hold its next meeting at the Municipal Building, Tenth and King Streets, Wilmington, Del., June 17-18, 1931, from 9 A. M. to 5 P. M.

For further information, address

W. S. P. COMBS, *Secretary,*
Middletown, Del.

THE MAINE STATE DENTAL SOCIETY will hold its Sixty-Sixth Annual Meeting at the Poland Spring House, South Poland, Maine, June 18-20, 1931.

W. D. TAYLOR, *Secretary,*
Mechanic Falls, Maine.

THE OKLAHOMA STATE BOARD OF DENTAL EXAMINERS will hold its next meeting in Oklahoma City, Okla., June 22-25, 1931.

E. E. SANGER, *Secretary,*
Yukon, Okla.

THE CONNECTICUT DENTAL COMMISSION will meet at Hartford, June 24-27, 1931, for the examination of applicants for license to practice dentistry and dental hygiene and to transact any other business proper to come before it.

Applications should be in the hands of the Recorder at least two weeks before the meeting. For application blanks and further information, apply to.

ALMOND J. CUTTING, D.D.S., *Recorder.*
66 Main Street, Southington, Conn.

THE MONTREAL DENTAL CLUB will hold its Seventh Annual Fall Clinic in the Windsor Hotel, Montreal, October 15-17, 1931, in conjunction with the McGill University Graduates' Reunion, which opens on October 14th.

ERWIN C. BURBANK, *Chairman of Publicity,*
1008 Medical Arts Bldg., Montreal, Canada.

THE AMERICAN SOCIETY OF ORAL SURGEONS AND EXODONTISTS will hold its Thirteenth Annual Meeting at The Elks' Hotel, Memphis, Tenn., October 16-17, 1931.

HOWARD C. MILLER, *Secretary,*
55 East Washington St., Chicago.

THE AMERICAN DENTAL ASSISTANTS ASSOCIATION will hold its Seventh Annual Meeting at Memphis, Tenn., October 19-22, 1931.

RUTH S. ROGERS, *President.*
Suite 803, 223 West Jackson Blvd.
Chicago, Ill.

THE AMERICAN DENTAL HYGIENISTS' ASSOCIATION will hold its Eighth

Annual Session in Memphis, Tenn., October 19-23, 1931.

AGNES G. MORRIS, *Secretary,*
886 Main St., Bridgeport, Conn.

GREATER NEW YORK DECEMBER MEETING

The Seventh Annual Greater New York December Meeting will be held at Hotel Pennsylvania, New York, N. Y., November 30-December 4, 1931.

An invitation has been accepted by the Chicago Dental Society to supply all essayists and clinicians for the entire meeting.

There will be a joint meeting of the five County Medical Societies of Greater New York and the First and Second District Dental Societies.

A manufacturers' exhibit will be held in the hotel simultaneously with this meeting.

THE OHIO STATE DENTAL SOCIETY

will hold its Sixty-Sixth Annual Meeting at the Netherland Plaza Hotel, Cincinnati, Ohio, December 1-3, 1931.

The Southern Society of Orthodontists will hold its meeting in Cincinnati on the same dates.

A cordial invitation is extended to all members of the American Dental Association.

E. C. MILLS, *Secretary,*
255 East Broad St., Columbus.

E. J. ROCHE, *Publicity Chairman,*
453 Doctors Bldg., Cincinnati.

THE NEW YORK DENTAL ECONOMIC SOCIETY

has arranged the following program for the ensuing year:

(1) *The Building of Good Will*—P. Wesley Coombs, Sr., Associate Professor of Marketing, New York University.

(2) *Psychology in Business and Profession*—N. L. Hoopingarner, Associate Professor of Business Psychology, New York University.

(3) *Personality Inventory*—To be made by the Psychological Corporation of New York.

(4) *The Present Status of the Principles and Practice of Good Dentistry*—Alfred W. Walker, Assistant Professor Pulp-Canal Therapy, New York University.

(5) *Law for the Dentist*—M. G. Jenkins, Attorney for the United States Fidelity and Guaranty Company.

(6) *Expression, Impressiveness, Poise*—Walker Matteson, Department of Business English, New York University.

(7) *The Present Status of Medico-Dental Research and Education*—Speaker to be announced.

(8) *The Efficient Administration of Dental Practice*—Speaker to be announced.

The purpose of the New York Dental Economic Society is to promote the best interests of its members. They have as a common ideal the sincere and active interest in self-development and improvement as these factors relate to public welfare.

Membership in the Society is now open to all ethical dentists in New York. Application for membership is subject to the approval of the membership committee and to a two-thirds majority vote of the Society.

JACOB REINER, *President,*
MORRIS TURKEL, *Secretary,*
708 Lexington Avenue, New York, N. Y.
HERMAN ALOFSIN, *Chairman Program Committee.*